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OFFICE OF POPULATION CENSUSES AND SURVEYS

SOCIAL SURVEY DIVISION

Sample Surveys in Local Authority Areas

with particular reference to the handicapped and elderly

by
Amelia I. Harris and Elizabeth Head

A guide commissioned by
The Department of Health and Social Security

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SAMPLE SURVEYS IN LOCAL AUTHORITY AREAS

Corrigenda and addenda

Because the handbook had to be produced in a very short time, various spelling and grammatical errors have slipped through. The understanding of what is meant should be quite clear.

Other misprints, omissions or corrections are shown below. Where necessary, would you amend your copy immediately.

page 30, 4.3, first line: after pages insert 37 - 43.
page 65, point 2, first line: substitute Qn 13 for Qn 12 shown in brackets.

page 1, paragraph 2, last two lines: delete all after "are impaired", and substitute, "and also a sample of persons aged 75 or over who, while not impaired, are living alone, and to investigate the needs of such people in the area."

page 22, 3.4, point 1, fourth line: the sentence in parentheses should read "As stated, basing estimates on a sample of less than 100 handicapped people is not likely to be very useful."

page 29, last line above footnote: delete 6/60 and substitute 6/36
page 30, 4.3, point 2, second line: delete 6/60 Snellen and substitute 6/36 Snellen

In connection with the eye-test, Dr Henley, M.O.H. Gateshead, has suggested that anyone with visual acuity worse than 6/24 Snellen should be considered for services, and that since the eye-test in home conditions will not be as accurate as the coding frame suggests (with which we agree), the whole test could be simplified by having two codes only, ie

Visual acuity	
6/24 or better	1
Worse than 6/24	2

irrespective of how much worse than 6/24 acuity may be. To do this, one would only need to show the X. However, it would be unwise to make any judgement on one showing only, as the informant would have a 1 in 7 probability of pointing to the correct letter by chance. It would be necessary to show three different letters of this size, and if the informant is unable to identify at least two out of three, to code vision as worse than 6/24 Snellen. The pack we have, however, has only one such letter namely X. We do not know whether the pack you had in mind has three different letters - or two different letters, with the first one repeated for the third showing, - or whether your M.O.H. may have different views on using 6/24 rather than 6/36.

There are, however, two letters X12 and U12 in the Sheridan Gardiner pack which could be used at 5 feet using a mirror, or 10 feet without using a mirror to measure visual acuity of 6/24 or worse.

Gateshead, at the suggestion of Dr. Henley, are using three letters - E, A and S (which of course reverse in a mirror-image) to test acuity from a distance of 10 feet (interviewers being given a piece of string to measure this) without use of a mirror. (Their letters are therefore half the size of the X24 we suggested or equivalent to the X12 and U12 in the Sheridan Gardiner pack shown at 10 feet unreflected.) This has the disadvantage of the informant having to recognize a letter of the alphabet and name it to the interviewer who will be standing 10 feet away. This will make it difficult to apply to young children and others not familiar with the English alphabet. We are grateful for Dr. Henley's and Mr Lythe's (Director of Social Services) suggestions and for all the interest they and others in the Social Services Department at Gateshead have shown.

Schedule

page 38 (question 4b - code 8): instruction to close interview
page 39 (question 5a - code 3): instruction to close interview

The instruction should read
"If no other postal 'Yes', close interview."

Page 15 - point 5 - finding electoral numbers

A simpler method of coping with an interval which has a rather low digit and a decimal place - for example 4.3 or 6.7 - has been devised. If the interval is 20.0 or larger, then one could work in whole numbers to the nearest whole number where the decimal is .1 - .4 or .6 - .9. This would mean that for every 2,000 addresses aimed at, dropping the point (1 - 4) would lead to selecting not more than 40 addresses more than wanted or point (6 - 9) would lead to losing not more than 40 addresses. If the decimal is .5, say 23.5, you could take every 23rd, 24th, 23rd, 24th etc. With smaller numbers, rounding down for x.1 and up for x.9 would make little difference to the number of addresses drawn. However, rounding down for x.2 - x.4 will result in more addresses which you may well be able to cope with, while rounding up x.6 - x.8 will give you fewer addresses, which might make it difficult to find enough handicapped if you are working on the minimum sample of 2,200.

What you could do is to adjust in accordance with the following example. Say your interval 6.7. Then by rounding up to seven you would be taking too few, so that one needs to adjust by using the pattern

7, 7, 6, 7, 7, 6, etc

which is pretty near the sample size aimed at.

A useful table is

x.2 = round down, then take (x, x, x, x + 1) .... repeat pattern
x.3 = round down, then take (x, x, x + 1) .... repeat pattern
x.4 = round down, then take (x, x, x, x, x + 2) ..... repeat pattern
x.5 = round down, then take (x, x + 1) .... repeat pattern
x.6 = round up to y, then take (y, y, y, y, y - 2) .. repeat pattern
x.7 = round up to y, then take (y, y, y - 1) .... repeat pattern
x.8 = round up to y, then take (y, y, y, y - 1) ..... repeat pattern

CONTENTS

Page

1.0 INTRODUCTION 1
1 OUTLINE OF THE STUDY 2
1.1 Identifying the handicapped 2
1.2 Man-power 2

2.0 DRAWING YOUR SAMPLE 4
1 SAMPLING FRAMES 4
1.1 Existing lists 5
1.2 Compiling a frame 6
1.3 Lists of the general population 6
1.4 Addresses, households or people? 7
2 SELECTING A SAMPLE 8
2.1 Determine sample size 10
2.2 Working out the sampling interval 11
2.3 Selecting the areas 12
2.4 Selecting a sample of addresses within the selected wards or parishes 14

3.0 STAGE I - CARRYING OUT THE POSTAL 18
1 Before posting 18
2 After posting 20
3 Calculating your response rate 21
4 Procedure for those with less than 85% response 22
Draft letter accompanying postal questionnaire 25
Postal questionnaire 26
Reminder letters 27

4.0 STAGE II - TO FIND THOSE 'AT RISK' AMONG THE IMPAIRED 28
1 The very severely, severely and appreciably handicapped 28
2 Handicap not adequately reflected by self-care 29
3 Summary of 'at risk' groups 30

5.0 GENERAL NOTES FOR ADMINISTERING QUESTIONS AND RECORDING ANSWERS 31

6.0 STAGE II INTERVIEWING SCHEDULE 37

7.0 STAGE III - DATA ON WHICH TO PLAN SERVICES 45
1 Stage III interviewing schedule 50
2 Assessing need in the sample of handicapped people 57
3 Editing and coding data for transfer to punch cards or tape 58
4 Punch data required for sorting those needing services from others 59

8.0 ESTIMATING NUMBERS IN THE COUNTY OR COUNTY BOROUGH FROM SAMPLE DATA 60
1 The effect of non-response on estimates 60
2 What you need to know to make an estimate 61
3 Accuracy of the estimates 62
4 Calculating confidence limits to determine sample size 63

9.0 RECOMMENDATIONS 65

10.0 PUBLICITY, COMMUNICATION AND PUBLIC RELATIONS 67

IN CONCLUSION 68

1.0 INTRODUCTION

The purpose of this handbook is to set out a method whereby local authorities will be able to get a reasonably good estimate of the number of people in their area who are handicapped, and how many of them need local authority services, so that services may be planned to cope with their needs. It should be remembered that the handbook is not designed to enable authorities to identify all the handicapped people in their area.

The method suggested is to take a random sample of households and to identify those in the sample who have special needs. In addition to obtaining a sample of the handicapped, the method will enable authorities to identify a sample of elderly people (aged 70 or over) who, while not very severely, severely or appreciably handicapped, are impaired and are also living alone, and to investigate the needs of such people in the area.

It will be possible to identify other groups in the sample who may be at less risk, but who may be considered for interviewing if resources are available.

The aim is to describe, with as little theory as possible, the practical steps necessary to carry out a sample survey, bearing in mind that resources may be limited. The identification and assessment of needs has been shown in three stages, the first stage eliminating those households where there are no impaired, the second where there is no-one "at risk", so as to conserve the more qualified personnel for the final stage of interviewing to assess need. If, however, there are ample staff available, the stages may be run together. Similarly there is a simple method shown for calculating approximate 70% "confidence limits". Authorities who have the services of a statistician may prefer to use more sophisticated formulae, or to calculate to grosser or finer limits.

As long as the basic principles of sampling and estimation are not changed, the suggested organisation of the work to be done may be freely adapted to suit individual cases. Similarly wording of accompanying letters could well be changed in the light of local knowledge or idiom. However, the wording and order of the postal questionnaire and interviewing schedules should not be amended, except, at Stage III, to delete or add questions on particular services, as indicated later in the text. Substitution of words, for example the word 'apartments' for 'rooms' in Scotland, or translation to the Welsh language in the Principality is, of course, excluded from this general rule.

1.1 OUTLINE OF THE STUDY

1.1.1 Identifying the handicapped

The national handicapped study(1) showed that roughly one in 13 people aged 16 or over living in private households has some mental, physical or sensory impairment, and that roughly one in 35 people aged 16 or over living in private households is permanently and very severely, severely or appreciably handicapped. The ratio for children is much smaller.

It has been estimated from the national survey that some 2,000 households will have to be approached to find about 300 impaired people of all ages, of whom approximately 100 will be handicapped (2).

It is therefore suggested that identification of the handicapped be carried out in stages, to conserve the most skilled man-power for assessing needs.

The study has been designed, therefore, to cover

A. Selecting a representative sample of households in a local authority area, (Section 2).

B. Identifying the handicapped, (Sections 3 - 7).

Stage I - by a postal sift to identify the impaired
Stage II - by a personal interview of the impaired to identify the handicapped
Stage III - by personal interview of the handicapped and 'at risk' elderly impaired to ascertain their need of welfare services.

C. Estimating the numbers of impaired and handicapped people, and their need for services, in the local authority area from this sample information, (Section 8).

1.1.2 Man-power

A. Selection of the sample will require one person who can follow the method described in Section 2 to supervise listing of wards and parishes, instruct clerical staff on the way to select names and addresses, and prepare the lists. If the area contains a large number of wards and parishes, particularly where there are many rural parishes and only a sample of these first stage units is being selected (see page 12), this listing and grouping can be very time consuming. For example, for Somerset Administrative County, with a total electorate of 426,700 in

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(1) Handicapped and Impaired in Great Britain, part 1, Harris, Cox and Smith, HMSO 1971.

(2) For brevity, the term 'handicapped' will be used to denote this group. The definitions of impairment and degrees of handicap are fully described in the national study. For this study the national study questionnaires have been amended to cover more fully the blind and the deaf, and to include children living in private households.

79 urban wards and 400 rural wards/parishes, the listing of the urban wards, and listing and grouping of the rural parishes into 111 first stage units with electorate of at least 1,500 took OPCS samplers 37 hours. (This stage would be much less time consuming for county borough councils, and/or where the whole area is being covered.)

B. Stage I - postal. A typist would be needed for addressing labels/envelopes, and clerical workers for collating questionnaires, letters and return envelopes and inserting them into addressed envelopes, checking returns, sorting into impaired/non-impared, and sending out reminders. This stage will need to be supervised.

Stage II - At stage two, personal calls will need to be made to get enough information to decide to what degree the impaired person is handicapped. Interviewing involves getting certain specified household data, asking set questions about certain functions, and recording carefully the answers given by the informant, without bias (1).

Interviewers could be members of voluntary bodies, RWVS, Red Cross, Inner Wheel, Rotarians, or specially recruited 'volunteers' such as students, retired teachers, local authority officials, and so on. Social workers could be used, but unless it is the intention to go straight on to Stage III, it may be a waste of trained resources.

Stage III - Personal calls to those who have now been identified as handicapped, or elderly 'at risk', to discover need.

There are two ways of doing this - by the administration by lay interviewers of a structured questionnaire in which case it may be a direct follow-on from Stage II - or by allowing social workers to assess the need, having being briefed to ensure consistency of judgement.

C. Estimating from a sample to the population.
A numerate person will be needed.

* * *

There will need to be some person in charge of the study, to whom queries at all stages can be addressed, and who will brief at all stages, including briefing of interviewers.

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(1) It is important that interviewers do not attempt to alter the subject's assessment of functional ability.

2.0 DRAWING YOUR SAMPLE

WHAT IS SAMPLING?

The concept of sampling is not new. Indeed, everyone does some sampling at some time. Every time a housewife seasons a dish and tastes it to see if there is enough salt she is 'sampling', that is she is taking a small amount and drawing a conclusion about the contents of the whole. Similarly, offered a slice of cake, one might say it is delicious after the first bite. There is no need to eat it all before passing an opinion.

Such observations are only true if the sample taken is representative of the whole. If one puts sugar in a cup of tea and then, without stirring, takes a sip to taste, that sample taken might lead one to conclude that more sugar is needed since the sugar will still be at the bottom of the cup. If, on the other hand, one took a spoonful from the bottom one would conclude that the tea was too sweet. Only after stirring the tea can one be said to judge the sweetness of the whole cup from the first sip.

The same principle applies to samples of the general population. One of the best ways is to draw names from a hat at random, but obviously with a population of, say, 20,000 this is not practicable. However, a similar effect can be achieved by selecting names at random from a list provided that list contains the names of all the population you want to sample once only(1). Say you want to select a sample of people receiving local health and welfare services. Some people will be getting more than one service. Therefore, if one simply puts all lists of those receiving a service together and then takes, say, every tenth name, the sample will not be a true one, since the more services a person has, the more chances he would have of being picked. The sample would, therefore, contain an undue proportion of people getting more than one service.

2.1 SAMPLING FRAMES

The list from which one selects a sample is called the sampling frame. Perhaps we should state at this stage that we are going to assume for the purposes of this handbook that authorities are fully aware of the needs of the handicapped in Homes, institutions, etc, that is, those who are not living in private households. The list we are looking for, therefore, should ideally contain once only all handicapped people living at home. It should be complete, accurate, up-to-date and easily accessible. It is unlikely that any one list would satisfy all these criteria, so we must therefore examine all available lists and see where their deficiencies lie, whether they can be corrected in any way, and which list offers the best frame.

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(1) The technical phrase is 'with equal probability' - that is, if every name appeared twice (or ten times), a random selection would be just as representative.

2.1.1 Existing lists

There are a number of existing registers from which one might expect to be able to draw a sample of the handicapped or elderly.

(i) The Executive Council Register

As far as the elderly are concerned, the Executive Council Register might be thought to provide a complete list. However, it does contain deficiencies not at first apparent.

(a) Out-of-date

When the Executive Council Register was used by a local authority recently, it was found that, of the sampled population, 13% were deceased, 11% untraceable and 11% moved away from the sampled address. Indeed, in one area 18% were deceased, 36% untraceable and 11% moved away. If the untraceable and those who have moved away remained within the same area the sample would be unrepresentative.

Thus, in this respect, it is not only deficient, but also has large variations in degree so that one cannot know how accurate the sample drawn will be.

(b) Problem of access

Local Executive Councils do not customarily give another authority direct access to their records. This could mean either absolute refusal of use of the register or that the Council may be willing to send the postal forms themselves. However, it should be remembered that since initial response rates tend to be very low (true of all postal surveys) usually two reminder letters are necessary, and the Council may be unwilling to undertake so much work.

(c) Catchment area

The Executive Council catchment area does not necessarily coincide with local authority health boundaries. This may cause difficulties.

(ii) Local health, welfare and voluntary lists

The two main deficiencies which make these lists inadequate as a sampling frame are:

(a) Incomplete

The national study has shown that a large number of handicapped people are apparently not known to the authorities.

(b) Duplication

As mentioned previously, some people may be on more than one list, thus giving an unrepresentative sample.

(iii) Doctors' records

Doctors' records might seem the best source of a list of handicapped and elderly people. However, all the problems of the Executive Council Register and a local authority's own lists occur here.

(a) Problem of access

It is very unlikely that doctors will allow local authorities access to their records, and the work involved in their conducting the postal stage is considerable.

(b) Out-of-date

(c) Catchment area

This again does not necessarily correspond with local authority health boundaries.

(d) Duplication

It is not all that rare for a person to have more than one doctor. (For example, a National Health doctor and a private doctor.)

(e) Incomplete

In the national study it was found that 8% of handicapped people had not seen their doctor within the last year, and so he may be unaware of their handicap. There is considerable regional variation; in some areas it is as high as 11%.

(iv) Other lists

Other government departments do have records of individuals and households, (for National Insurance, social security, tax purposes, etc.,) but they will not allow access to records or release information. In any case, most of these lists are of parts of the population only, for example people receiving some form of state benefit.

2.1.2 Compiling a frame

Since there is no existing list of handicapped people, we must see whether from a sample of the general population we can identify those who are handicapped, thus enabling an estimate to be made of the number of people with varying degrees of handicap within a local authority area. By further investigation of these handicapped people one can establish the extent of unmet need.

2.1.3 Lists of the general population

The two most easily available lists of the general population from which samples may be obtained are:

(i) The Valuation Lists

The valuation lists contain all hereditaments other than industrial and freight transport. Although a brief description is given for each unit (eg 'house', 'flat') sometimes this is ambiguous. This means that private dwellings cannot always be distinguished. Also, the rating lists contain few names and often very poor postal addresses, usually adequate if interviewers are being used, but not for a postal enquiry. As with most lists it is not up-to-date. Thus, the method of selecting a sample from the valuation lists, such that each private dwelling has an equal chance of selection is very laborious. Experience has shown that included in the sample will be demolished property, units not yet constructed and those with which the description does not tally.

(ii) The Electoral Register

The disadvantages of the Electoral Register are not so great. Although it is out-of-date by up to 16 months (compiled in October, and then in force for 12 months from the following February), at least this deficiency is known and measurable. In practical terms some difficulty is caused since in most rural areas electors are arranged alphabetically, but this can be overcome.

In its favour, it has a numbered list of people aged around 17 and over (except, of course, certified lunatics and convicted felons), and, if one accepts that it is unlikely that one will find many addresses and/or households where all members are under 17 years old, it will be a complete list of addresses which can, as will be shown later, be translated into households.

It is easily accessible, and divided into convenient units (wards, parishes, polling districts) and is probably the best frame to use for this purpose.

2.1.4 Addresses, households or people?

The purpose of this handbook has already been stated, and ideally the sample should be of individual people of all ages living in private households where the service is personal - for example chiropody and nursing -, or of households where, if there were more than one handicapped person in a household, one provision would benefit all, for example home help and ramps.

If a random sample of named individuals could be drawn, then, by collecting a few facts about the others in each household, an assessment of the household needs could be made. However, even our suggested 'best buy', the Electoral Register, will not give us named individuals under 17 years old, and, even if it did, proportions of between 4% and 14% (dependent on the age of the register when interviewing) will have moved and, consequently, those who have taken over the dwellings will not have had a chance to be picked.

There are, too, other difficulties involved where one is sampling individuals to identify those with a special characteristic, in this case, handicap. If, for example, the named person is a fit young man living with his parents, the father being totally incapacitated and not selected in the sample, it would be virtually impossible for him to believe that a local authority, purporting to want to make plans to help the handicapped, would want, at the postal stage, to know if there is anything he cannot do, and not be interested in his father. He would probably assume that the envelope was wrongly addressed, and the details given on the returned form would be those relating to his father. Indeed, it is difficult enough to avoid the inclusion of handicapped people not even in the sample household who have been 'found' by a socially-conscious addressee.

Similarly, having identified two impaired people at one address, an interviewer might find it embarassing to have to interview the one with the lesser handicap, and difficult to convince them of the good sense of the local authority. In any event, an approach to a household is more in keeping with the aims of the new Social Services Departments.

It would appear, therefore, that the most practical method would be to draw a sample of households, and identify all the impaired, from infancy to old age, living in each household, even though, in the comparatively small proportion of households where there are two handicapped people, the data will be affected by 'grouping', that is, because they live together they have the same advantages and disadvantages.

It is not possible, from the Electoral Registers, to select a sample of households direct, but a sample of addresses can be adjusted to give a good household sample, and, using the method described in the following pages, by taking all people of all ages, a representative sample of individuals. Since the sample will consist of all people living at a specified household not necessarily a named person, one both avoids excluding people who are not registered as electors, and the time-consuming necessity of following up people who have moved within the sample area since the register was compiled.

2.2 SELECTING A SAMPLE

To select a sample from a given population it is necessary [1]

(a) to know the size of the population - denoted by symbol N

(b) to decide the size of the sample - denoted by symbol n

(c) to calculate the sampling interval $\frac{N}{n}$

Thus, if one wanted to sample 100 school-leavers from a total of 1,000 school-leavers, the sampling interval would be 10,

$$\frac{\text{Total of school leavers} = N = 1{,}000}{\text{Size of sample} = n = 100} = 10$$

that is, one selects, from a random start, every 10th name.

If one wanted to select a sample of 100 welfare officers from a total of 950 welfare officers, the sampling interval would be 9·5. Not even the most dedicated sampling officer would follow this through to its logical conclusion. In such cases, compassion and commonsense would prevail and one would take, after the random start, the 10th and the following 9th names alternately.

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[1] It is possible to draw a sample from a population of unknown size and to calculate the size of a population from a sample, but it is not necessary to go into that here.

This is the basis of sampling, and if all populations were small, and the interval relatively small, it would be simple. In practice, however, there are complications, and the rest of this section suggests a step-by-step method of how to deal with these. Some areas may have sampling experts available who will suggest alternative methods or sources. One need not feel bound to select the sample this way. The method is given in detail and the treatment may seem too elementary to those with experience of sampling, but it seems to us that, at this very important stage, it is essential to avoid ambiguity, especially in areas where experience in sampling is limited.

Firstly, find the total number of households in the administrative county or county borough

This can be found from the Sample Census, 1966, County Reports, Table 7A(1). As you may know, the County Reports are available for each of the English and Welsh counties separately. Scottish counties are grouped into ten volumes as follows:-

1. City of Edinburgh, East Lothian, Midlothian, Stirling, West Lothian
2. Clackmannan, Fife, Kinross
3. City of Glasgow, Lanark
4. Dunbarton, Renfrew
5. Ayr, Bute
6. City of Dundee, Angus, Perth
7. City of Aberdeen, Aberdeen, Banff, Kincardine, Moray, Nairn
8. Argyll, Caithness, Inverness, Orkney, Ross and Cromarty, Sutherland, Zetland
9. Berwick, Peebles, Roxburgh, Selkirk
10. Dumfries, Kirkcudbright, Wigtown

The figure used should be that for TOTAL HOUSEHOLDS, not households present(2).

---

(1) The 1971 Census will be producing tables for the reorganised local government areas when these are finally settled; it is not at this stage known whether wards and parishes will be retained. Torbay and Teeside county boroughs were set up after the 1966 Census; OPCS can supply figures for these areas if wanted.

(2) For those not familiar with the 1966 Sample Census, remember that it shows only a 10% sample. To get the total number in the area a 0 should be added. For example, if the number of households given in the Census is 50,00 the number in the area is 50,000.

2.2.1 Determine sample size

One of the reasons for taking samples is to conserve resources. What one aims for is to make the smallest number of observations necessary to give results of an acceptable standard of accuracy(1), that is which are as close to the true values as one needs for one's purpose.

If, for example, one wanted to know what proportion of people were likely to use the public library, and a sample of 500 people provided an estimate of 10,000 - 12,000 while a larger sample of 2,000 people enabled one to estimate 10,500 - 11,500, the closer accuracy would not really affect the practical considerations. If, on the other hand, one wanted to plan residential accommodation for the elderly, and a sample of 500 indicated 40 - 50 places, while a larger sample was able to narrow this to 45 - 48, it might well be worth doing a larger study.

Sometimes, however, one has to look at this in reverse. That is, the research resources are not available to get the standard of accuracy one would like, so one is prepared to accept a lower standard, rather than have no estimate at all.

It must be remembered that the accuracy of the estimation depends more on the actual size of the sample than what proportion of the population it represents. Section 8 shows how to calculate the magnitude of the sampling error, and it will be seen that to double the accuracy, one has to take a sample four times as big, not twice as big.

How many people need to be interviewed in your area?

We suggest that basing estimates on a sample yielding less than 100 handicapped people is not likely to be very useful, while a sample yielding 500 handicapped will give estimates with a degree of accuracy that would be satisfactory for most purposes(2). You will have to decide with how big a sample you will be able to cope.

From the national survey it has been estimated that on average one should obtain interviews from

100 handicapped people from a sample of 2,200 households
200 handicapped people from a sample of 4,400 households
300 handicapped people from a sample of 6,600 households
400 handicapped people from a sample of 8,800 households
500 handicapped people from a sample of 11,000 households

These estimates depend on getting an 85% response rate to the postal enquiry, and 92% at the interviewing stage. If you do not achieve these rates, you not only will not have enough to make estimates reliably, but the sample interviewed may be unrepresentative (see paragraph 3.4).

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(1) We are here concerned only with the errors or bias that might be introduced by sampling.

(2) We are oncentrating on the handicapped as a basis for deciding sample size, ignoring elderly impaired, as they are to be found in greater numbers.

There is nothing sacred about 'hundreds'. If you can manage with your resources to cover, say, more than 2,200 households, but not as many as 4,400 households, then take a number in between. Remember, there are regional variations in the proportions of handicapped, and the above figures are given for guidance.

Although the main object is to plan services with the handicapped in mind, many of these services will be used by the elderly who are impaired although not necessarily very severely, severely or appreciably handicapped.

2.2.2 Working out the sampling interval

Having decided on the size of the sample, you should then work out the sampling interval for households needed to achieve this sample. As stated this can normally be found by dividing the total number of households in the area by the number of households required for the sample.

However, the selection of addresses from the Electoral Register is based on the use of electors' numbers. Because addresses vary in the number of electors they contain, the address appearing as often as the number of electors at it, a simple selection of addresses taken by sampling the individuals within them would give multi-elector addresses a greater chance of being selected than those containing only one elector. The more electors there were at any address, the more chances that address would have of being picked in the sample.

Firsting

This problem is overcome by a technique known as 'firsting'. The principle is to select an address only if the first person listed there is chosen, ignoring any other electors, and thus giving each address only one chance of being selected, since every address must have one, and only one, 'first person'.

If, however, we were to calculate the sampling interval by dividing the total number of households by the number of households required in the sample, and then discard any household where the chosen elector was not the first person at the address, we would clearly end up with a much smaller number of households than we required. Allowance must therefore be made to enable us to include the 'first-person' address only, without affecting the final sample size.

It has been calculated that there are, on average, approximately 2·3 registered electors at one address. Thus, if we multiply the number of addresses needed by this figure, we would then compensate for any discards. In practice it is more reasonable to multiply by 3 than 2·3 since some chosen addresses will be institutions, business addresses etc., and will therefore be excluded from the final sample.

You should therefore multiply the number of households wanted by 3, to obtain nearly three times as many electors' numbers as wanted, two-thirds of which will be deleted under 'firsting'.

eg If you want a sample of 2,000 households and the total number of households is 40,000 then the sampling interval

$$= \frac{40{,}000}{2{,}000 \times 3} = 6{\cdot}6 \text{ recurring}$$

This means you will take 1 in 6·7 of the total households (1).

Reducing the scatter

If one simply took every xth address on the register (x being the sampling interval), the resultant scatter of addresses might create problems, especially in the case of county councils, at the interviewing stage. One might find that some 200 handicapped people were to be interviewed and were scattered throughout a large administrative area.

This may, or may not, create a problem. If the people to be used for interviewing are themselves located over a wide area, then clearly it is easier for them to work within their own surrounding area. If, however, they are concentrated in particular locations, it might be helpful if one could concentrate the calls in a smaller number of areas though not necessarily the ones where interviewers are available. This can be done by having a two-stage sample.

Paragraph 2.2.3. is designed to deal with reducing the scatter where the population is large, and/or where it would be very difficult to cover the whole area, and shows how to pick primary sampling units from within which the whole sample is taken.

2.2.3 Selecting the areas

The Electoral Register given constituencies, wards within constituencies for urban areas, parishes or wards within parishes for rural areas and polling districts within wards and parishes.

The most conveniently sized areas for selection at the first stage are the wards and parishes of constituencies.

1. (i) County boroughs
   Make a list of all wards within your borough in order of size of electorate, the largest first (2).

   (ii) County councils
   Separately for urban and rural districts, make a list of all wards/ parishes in your county area in order of size of electorate, the largest first (2).

It is necessary to list wards/parishes in order of size so that the eventual sample will have people from both large and small wards or parishes. This is what would occur if one sampled throughout the county borough or administrative county, and so is just a means of ensuring a representative spread. This need for 'spread' is also the reason for listing urban and rural areas separately for county councils.

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(1) This interval should be worked out to one decimal place. How to treat decimal places will be explained later.

(2) Since the Electoral Register is being used as the frame, and the size of electorate by wards is easily available locally, the size of electorate has been selected rather than total population.

There is nothing sacred about 'hundreds'. If you can manage with your resources to cover, say, more than 2,200 households, but not as many as 4,400 households, then take a number in between. Remember, there are regional variations in the proportions of handicapped, and the above figures are given for guidance.

Although the main object is to plan services with the handicapped in mind, many of these services will be used by the elderly who are impaired although not necessarily very severely, severely or appreciably handicapped.

2.2.2 Working out the sampling interval

Having decided on the size of the sample, you should then work out the sampling interval for households needed to achieve this sample. As stated this can normally be found by dividing the total number of households in the area by the number of households required for the sample.

However, the selection of addresses from the Electoral Register is based on the use of electors' numbers. Because addresses vary in the number of electors they contain, the address appearing as often as the number of electors at it, a simple selection of addresses taken by sampling the individuals within them would give multi-elector addresses a greater chance of being selected than those containing only one elector. The more electors there were at any address, the more chances that address would have of being picked in the sample. Also, because there is an average of 2.3 electors per household, the number of electors drawn would be 2 to 3 times as great as the number of households required.

Firsting

This problem is overcome by a technique known as 'firsting'. The principle is to select an address only if the first person listed there is chosen, ignoring any other electors, and thus giving each address only one chance of being selected, since every address must have one, and only one, 'first person'.

eg If you want a sample of 7,500 households and the total number of households is 50,000 then the sampling interval

$$= \frac{50,000}{7,500} = 6.6 \text{ recurring}$$

Applying this interval to the number of electors will mean selecting between 15,000 and 22,500 electors' numbers of which the excess over 7,500 will be discarded under the 'firsting' principle.

However, there have been changes in the number of households in local authority areas since the Census in 1966, and where an authority knows there has been an appreciable change in the number of households, it may consider it advisable to use the current electorate figure to calculate the interval.

As we have pointed out, the electorate is on average 2.3 times greater than the number of households. Therefore we will have to divide the total electorate by the average number of electors per household to give us an estimated number of households. In practice it is more reasonable to divide by 3 rather than the national average, since some chosen addresses will be institutions, business addresses, etc. and will therefore be excluded from the final sample.

The formula is, therefore

$$\frac{\text{Total electorate}}{3 \times \text{number of households required for sample}}$$

The firsting principle will still apply.

There is nothing sacred about 'hundreds'. If you can manage with your resources to cover, say, more than 2,200 households, but not as many as 4,400 households, then take a number in between. Remember, there are regional variations in the proportions of handicapped, and the above figures are given for guidance.

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If, however, we were to calculate the sampling interval by dividing the total number of households by the number of households required in the sample, and then discard any household where the chosen elector was not the first person at the address, we would clearly end up with a much smaller number of households than we required. Allowance must therefore be made to enable us to include the 'first-person' address only, without affecting the final sample size.

It has been calculated that there are, on average, approximately 2·3 registered electors at one address. Thus, if we multiply the number of addresses needed by this figure, we would then compensate for any discards. In practice it is more reasonable to multiply by 3 than 2·3 since some chosen addresses will be institutions, business addresses etc., and will therefore be excluded from the final sample.

You should therefore multiply the number of households wanted by 3, to obtain nearly three times as many electors' numbers as wanted, two-thirds of which will be deleted under 'firsting'.

eg If you want a sample of 2,000 households and the total number of households is 40,000 then the sampling interval

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~~This means you will take 1 in 6·7 of the total households [1].~~

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If one simply took every xth address on the register (x being the sampling interval), the resultant scatter of addresses might create problems, especially in the case of county councils, at the interviewing stage. One might find that some 200 handicapped people were to be interviewed and were scattered throughout a large administrative area.

This may, or may not, create a problem. If the people to be used for interviewing are themselves located over a wide area, then clearly it is easier for them to work within their own surrounding area. If, however, they are concentrated in particular locations, it might be helpful if one could concentrate the calls in a smaller number of areas though not necessarily the ones where interviewers are available. This can be done by having a two-stage sample.

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It is necessary to list wards/parishes in order of size so that the eventual sample will have people from both large and small wards or parishes. This is what would occur if one sampled throughout the county borough or administrative county, and so is just a means of ensuring a representative spread. This need for 'spread' is also the reason for listing urban and rural areas separately for county councils.

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[1] This interval should be worked out to one decimal place. How to treat decimal places will be explained later.

[2] Since the Electoral Register is being used as the frame, and the size of electorate by wards is easily available locally, the size of electorate has been selected rather than total population.

Each electoral registration officer makes a return (form RPF - 29) for the General Registrar's Office every year showing the number of electors in each ward/parish of his constituency(ies). By and large constituency boundaries coincide with local authority boundaries, but in some cases, particularly in the Midlands, one constituency may fall within more than one local authority area. Similarly, in some cases (Yorkshire West Riding, for example) some of the M.B.s have their own returning officer. However, all local authorities should know the returning officer(s) in their area and he will be able to supply a list of the number of electors in each of his wards. In Scotland it may be necessary to ask for further details of small burghs.

For convenience, the size of the electorate given can be rounded to the nearest 100 for wards/parishes of 1,000 or over, and to the nearest 10 for wards/parishes of less than 1,000.

2. Group any small wards or parishes into geographically contiguous units of approximately 1,500 electors

This probably only applies to county councils where there may be a large number of very small parishes particularly in the rural districts.

This step is necessary to avoid selecting a large number of areas where the expected number of handicapped people is nil or very few. (Parish electorates range from 0 to 15,000.)

You now should have a list of your primary sampling units, treating parishes that have been grouped to form units as one unit only. Number these units consecutively, treating the urban and rural lists for county councils as one list and number consecutively throughout both.

3. Select, from this list, your areas

The way in which wards or parishes should be selected is dependent on the size of the county borough or administrative county electorate. If the population is large it is common practice to select proportionately fewer wards or parishes since these will still be representative of the whole area. To simplify this we have given below an easy guide.

I If the total electorate is less than 100,000 take ALL wards/parishes.

II If the total electorate is between 100 - 200,000 take 1 in 2 wards/parishes.

III If the total electorate is between 200 - 400,000 take 1 in 3 wards/parishes.

IV If the total electorate is over 400,000 take 1 in 4 wards/parishes.

In the case, where only half (1 in 2) of the wards or parishes are wanted, toss a coin to decide whether you should start selecting at the first or the second of your units. If it lands heads start with the first and then take the odd numbers 3, 5, 7, 9, etc. If tails, take the second unit, then all even numbers 4, 6, 8, etc.

In cases where selection is less than 1 in 2 start with unit 1 and then, if 1 in 3 is needed take every 3rd unit, if 1 in 4 every 4th and so on. For example, if you are taking 1 in 3 you will take units 1, 4, 7, 10 etc, if 1 in 4, units 1, 5, 9, 13 and so on (1).

After carrying out the above steps, 1 - 3, you should have selected a representative sample of wards or parishes, equal to approximately or exactly a half, a third, a fourth of the total number of wards.

2.2.4 Selecting a sample of addresses within the selected wards or parishes (2)

Procedure to follow

1. Multiply the sampling interval by the proportion of wards/parishes taken.

ie if all wards/parishes taken x 1
if $\frac{1}{2}$ wards/parishes taken x $\frac{1}{2}$
if $\frac{1}{3}$ wards/parishes taken x $\frac{1}{3}$
if $\frac{1}{4}$ wards/parishes taken x $\frac{1}{4}$

Thus if, as in our previous example, the interval was 6·6 and half the wards/parishes in the area were being sampled, then the interval for these wards would be $\frac{1}{2} \times 6{\cdot}6 = 3{\cdot}3$.

You should now know the number of people necessary to find your desired sample, the areas in which the sample should be drawn and the sampling interval.

2. List the range of electors' numbers in each of the polling districts in your chosen wards/parishes (any order).

3. Cumulatively total the electorate (3).
(Note electors' numbers do not always start at 1.)

This is really as a check that all polling districts within the county borough or administrative county have been included.

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(1) It is not good sampling practice to start invariably with the first unit, since one should have a random start (as in the previous case where tossing a coin gave the random start of 1 or 2). However, it is rather more complicated to find a random start if there are more than two possible alternatives. Also, by advising starting with the first unit we hope to avoid your missing wards that are very much bigger than any others in the county, and so missing an area where there might be a geographical concentration of (handicapped) people.

(2) Further details are given in the paper 'The Electoral Register' by Sheila Gray, M 151, which is enclosed. The relevant parts of the paper are quoted or summarised here for convenience.

(3) A cumulative total may be more familiar as a 'running' total; see example.

You should now be able to fill in the columns on a form such as the following.

Ward/ parish	Constituency	Polling district	Range of electors' numbers		Number of electors	Cumulative total of electors
			First	Last		
South	Exton	AA	1	1,227	1,227	1,227
Staple	Erewhon	BF	1	4,362	4,362	5,589
Highbridge	Erewhon	MD	12	3,908	3,897	9,486

4. Determine your random start

Since every unit in the population considered should have an equal chance of selection, it is advisable that the point at which selection is started should be random.

For ease of calculation, the random start should be less than your determined interval. If your interval is small, say less than 1 in 10, the easiest way is probably to number individual slips of paper, put them in a hat and then pick one out. Whichever number is drawn is the first number in your sample.

For larger intervals, you could repeat this process for units, tens and hundreds, not forgetting to have the number '0' on one slip of paper, or use random number tables.

5. Find the electoral numbers of electors in the sample

Having found a random start to give the first selection, keep adding the interval until all the multiples that can be achieved within the total electorate have been covered for the first polling district. Decimal points should be taken to the nearest whole number after adding the interval. For example, if the interval is 6•7 and the random start 2, the selected numbers would be 2, 8•7, 15•4, 22•1, 28•8, 35•5, 42•2 and so on. Since electors' numbers do not contain decimal places (!) you should then take the selected numbers to the nearest whole number, ie 2, 9, 15, 22, 29, 36 and 42. Count the number of electors remaining after the last selection in the first polling district, and subtract this number from the interval; this gives the number of the first elector to be selected in the next polling district. If the electors' numbers of the next polling district do not start with 1, keep adding your interval until you reach a number within that polling district. Continue adding the interval, and subtracting at the end of each polling district until the complete electorate has been covered. This produces a series of electors' numbers within polling districts which can be translated from the register into named individuals.

6. Find the electors' numbers in the register and delete any that are not the first person shown at the address

As stated previously, by selecting the address only if the chosen elector is the first person listed there, all addresses then have an equal probability of selection, whether they are multi-person or single person ones.

Therefore, look up the electors' numbers you have found and delete any which do not relate to the first name at the address. The resultant list of undeleted numbers will give you the names of the people and thus the addresses to be included in your sample.

A special note for rural areas

'Firsting' is simple enough in urban areas where all electors at one address are listed together. However, because in rural areas electors are listed alphabetically by surname some difficulty arises. Persons living at the same address are not necessarily listed together, but are sometimes scattered throughout the polling district. To 'first' one must read the register carefully, going from the selected elector's number back to the beginning of the polling district to see if the identical address has appeared before.

(Sheila Gray's paper has further detail.)

A special note for areas where there is a high incidence of multi-household addresses

Although all over the country there is some incidence of addresses containing more than one household, the proportion is so low in most places that special treatment of these addresses is unnecessary. However, for certain London boroughs and much of Scotland (particularly Glasgow and the West Central region) the proportion of multi-household addresses is too high to be ignored.

There is no completely satisfactory solution to this when drawing a sample for a postal stage. A reasonably satisfactory way is, where there is an address, other than a known institution such as a hospital, old people's home, etc., and there are three or more surnames shown, to treat each surname as a likely separate household, and, where it occurs for the first time at the address, it should be included in the sample list. For example

	Askwell Close
151 Pillay, Catherine	1
152 Pillay, Peter Roger	1
153 Southern, Denis	1
154 Wisdom, Eugene	1
155 Bowles, Herbert	1
156 Bowles, Clara	1

If the number to be sampled is 155, then, since this is the first time Bowles appears as a surname at an address containing three or more surnames, it should be taken. Similarly 153 and 154 would both warrant inclusion. However, no. 156, if this were to be the selected number, would be excluded under 'firsting'.

7. Make out the sample address list

Since this booklet is intended for local surveys, it should not be difficult, having identified the address wanted (point 5), to find the correct postal address using local knowledge. (Roughly only one in three constituencies gives a full postal address for the places covered by each polling district.) In case of difficulty the G.P.O. book of "Postal Addresses", published yearly and sold at larger Post Offices, and the beginning of the telephone directories outside the London Postal District may help.

The postal form should be addressed to 'the Occupier', except in cases where there are three or more surnames at the address when it should be addressed 'L Jones Esq or Occupier'. (Experience has shown that in multi-surnamed addressed the letters tend to be returned 'Not known for Whom Intended" if sent only to 'the Occupier'.)

8. Delete any addresses which are Homes, hospitals, business premises, hotels, boarding houses, hostels

It may be worthwhile getting a welfare officer to go through the final list since he may recognise addresses as, say, residential homes which are not immediately obvious.

9. Number the final list of addresses consecutively from 1

This is mainly for ease of administration at the postal stage.

You should now have achieved a random sample of addresses of about the size wanted. You may have slightly more or less than, say, the 3,000 you wanted, but this is to be expected. If however you are very much over your expected number and the resultant sample would be beyond your resources, or somewhat less than your expected number please telephone for further advice.

IMPORTANT (for those unfamiliar with survey techniques)
Since it is essential that your sample is representative and random

DO NOT OMIT ANY SELECTED AREAS WHERE YOU THINK THERE IS NO NEED

DO NOT OMIT ANY ADDRESSES BECAUSE YOU ARE ALREADY CALLING

3.0 STAGE I - CARRYING OUT THE POSTAL

This section describes the kind of procedure used by OPCS for carrying out a postal survey. Basically, what is involved is sending out a postal questionnaire with an accompanying letter, followed up by two reminder letters sent at fortnightly intervals, the second containing another postal questionnaire in case the first has been mislaid. All that is really needed is some kind of check on incoming forms, and a system for sending reminders to the people who have not replied. We have given some guidance on how many replies can be expected in the first and second fortnights and thus how much stationery will need to be ordered. You may find it easier to adopt some other form of administering the postal stage, but the following notes should provide some guidance.

Suggested procedure to follow

3.1 BEFORE POSTING

1. Reproduce the addresses on the sample list in quadruplicate

Typing the addresses on gummed paper with label size perforations is useful since this avoids any cutting at a later stage. A good typist can do about one label a minute initially, but the longer she goes on at any one time, the longer it will take. We would estimate about 40 hours work for 2,200 address labels, excluding time needed for corrections, retyping and so on.

If you have some form of data processing unit, they may be able to suggest other ways of reproducing the address list - for example, from punched cards - and it is probably worthwhile consulting them.

MAKE SURE THE SERIAL NUMBER ON THE LABEL IS THE SAME AS THE NUMBER OF THE ADDRESSEE ON THE SAMPLE LIST

The four copies are

1 for the postal questionnaire (1)
1 for the first reminder
1 for the second reminder and questionnaire (1)
1 for those not contacted by the closing date

2. Reproduce the postal form and letters

The postal form and suggested introductory letter can be found at the end of this section, and are amended versions of the postal questionnaire and letter used in the national study. It is wise to use the form given since we know it 'works', that is these questions do enable one to identify the impaired, and the accompanying letter should get a good response.

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(1) This assumes the use of window envelopes, with the questionnaire folded so that the address shows through the window. If ordinary envelopes are used, it is essential that the serial number is put on the form (preferrably inconspicuously).

Quantities

Forms and letters

Postal form - sample size + 40% extra to go with second reminder
Initial letter - sample size + 40% extra to go with second reminder
1st reminder - 60% of sample size (expect 50% response after the first fortnight)
2nd reminder - 40% of sample size (expect 75% response after the first four weeks)

Envelopes

Window envelopes ($\left.\begin{matrix}\text{quarto}\\ \text{foolscap}\end{matrix}\right\}$ size) - sample size + 40% extra
Ordinary envelopes - 60% sample size (for first reminder)
Prepaid return envelopes - sample size + 40% extra

3. Decide the postal date and arrange with the Postmaster to send out all forms on the same day

It is important, for the sake of good public relations at least, to warn the Postmaster that there will be several thousand letters posted on the same day so that he can make any special arrangements for delivery.

Postal date

This will obviously depend on how long it takes you to draw the sample, type the address labels and arrange for reproduction of the forms, letters and envelopes. We have found it advisable to post on a Wednesday or Thursday since this gives the addressees time to look at the form over the weekend and, especially in the case of the elderly, get someone to help or reassure them if in any difficulty.

These first steps can, of course, be carried out simultaneously.

4. Stick address labels on postal forms, and file, in serial number order, the other three copies (in envelopes possibly) with the serial number on the front of the envelope.

Filing the extra copies of addresses in serial number order makes it easy to find those who have not replied when it comes to sending reminders.

5. Put postal form, accompanying letter and prepaid reply envelope in envelopes.

6. Post on the day the letter is dated!

3.2 AFTER POSTING

7. As replies come in, check returned questionnaires, removing from the file the envelope with the extra address labels as these are not now needed for reminders, and, as a double check, cross the name off the original address list. As the same time, returned questionnaires should be sorted

    (a) into households where there are no impaired or elderly people 'No' to all items 1 to 13 on the form (question 14 'Yes' or 'No')

    (b) into households where there is an impaired person 'Yes' to any of items 1 to 12

    (c) into households where there are no impaired, but there is an elderly person (75 or over) living alone 'Yes' to items 13 and 14

    (d) into households where there are no impaired, but there is an elderly person (75 or over), not living alone 'Yes' to item 13 only

    Groups (b) and (c) and possibly (d) should be set aside for interviewing (Stage II).

    The questions on the postal form have been termed 'items' to avoid confusion at the interviewing stage.

8. First reminder

    Towards the end of the second week after posting, get ready the first reminder letter for those not replying (identified from those with labels still on file) and post a fortnight after the initial letter (1). As stated, you should have about a 50% return at this stage.

    Check further replies as point 7.

9. Second reminder

    Towards the end of the fourth week after posting, get ready the second reminder letter, together with a second copy of the initial letter, postal questionnaire and prepaid return envelope, for those who have not yet replied. Post four weeks after the date of the initial letter (1). (Expected return 75% after four weeks.)

    Check further replies as point 7.

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(1) There may be a few returns after preparing the reminders and before posting. Remember to take these out of the 'reminder' group.

10. How long should the postal stage last?

The authors were still receiving replies months after the original posting, and so at some point one has to stop including replies in the sample for interviewing, otherwise the interviewing itself is unnecessarily delayed.

The expected return in the fortnight after the second reminder is about 10% bringing the response for the total six-week period to about 85% of all eligible addresses(1). Since our estimates of the number of impaired you will find are based on an 85% response rate at the postal stage, in six weeks you should have found enough impaired people to identify at least 100 handicapped people. We therefore suggest that, provided the response rate is acceptable, (see below), you proceed with the next stage after six weeks, and not wait for 'stragglers'.

There is, of course, no compulsion to exclude any late forms coming in which might qualify for an interview, if they can be fitted into the interviewing programme. The extra data is unlikely to have much effect on the final result, but it may mean that you will be able to identify another handicapped person or two.

3.3 Calculating your response rate

The response rate is simply the proportion of replies received from eligible addresses - see example below.

Number of envelopes sent out	2,200
Ineligible addresses	
Number returned by Post Office where	
demolished	16
unoccupied	21
(if returned for reasons such as 'dead', 'gone away' or 'not known' these should be readdressed to 'the present occupier')	
Number returned from institutions	3
Number returned from business premises	10
Total ineligible addresses	50
∴ Eligible address sample (2,200 - 50)	2,150
Questionnaires completed	1,850

$$\therefore \underline{\text{response rate}} = \frac{1{,}850}{2{,}150} \times 100 = 86\%$$

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(1) Almost inevitably some addresses will be for empty or demolished buildings, and some private 'institutions' such as nursing homes may also have been included.

If your response rate is 85% or over you can go straight on to the interviewing stage, since we have found, with this response, that those not replying are unlikely to be any different from those who have replied. If, however, your response is less than 85% six weeks after the initial posting, the question then arises as to whether the sample is adequately representative. A secondary question is whether you will eventually find enough handicapped people to form reliable estimates.

3.4 Procedure for those with less than 85% response

1. If the response rate is 80% - 84%

The sample is likely to be representative, but if you have only taken the minimum sample advised it is likely that you will have found too few impaired to give 100 handicapped people at the next stage. (As stated, basing estimates on less than 100 is not likely to be very useful.) In this case, it will be necessary to do some sort of personal callback to try to raise the response rate. A suggested method is outlined below (see points 3 and 4).

If your response is 80% to 84% and you have taken more than 2,200 addresses originally, go on to Stage II.

2. If the response rate is less than 80%

With response rates of less than 80%, not only may you have insufficient impaired people to give the minimum 100 handicapped people, but also the sample may be unrepresentative. This means that some particular reason may be stopping people from replying - the most obvious one being that they are not impaired, and would answer 'no' to all items on the form. You should therefore do a personal callback on a random sample of the addresses from which there has been no reply to check, firstly, on how representative the postal replies are, and, secondly, to raise your response rate to enable you to find enough handicapped people in the next stage.

3. How to find a sample of addresses to call back on

The authors suggest you should try and call back on

about 100 addresses:	if your response rate is 80% - 84% and your sample was 2,200
or	if your response rate is less than 80% and your sample was more than 2,200
about 200 addresses:	if your response rate is 75% - 79% and your sample was 2,200
about 300 addresses:	if your response rate is 70% - 74% and your sample was 2,200

If your response rate is less than 70%, it is possible that something has gone radically wrong, and you should call in specialist advice.

The addresses should be selected at random from the remaining envelopes on file, on the same principle as the original sample was selected:

ie $$\frac{\text{Total addresses still on file}}{\text{Number of addresses wanted for callback}} = \text{sampling interval}$$

For example, $$\frac{650 \text{ (not heard from)}}{100 \text{ (wanted for callback)}} = 6{\cdot}5$$

You can then find a random start (page 15), and keep adding your interval until all remaining addresses have been covered. You should then call back at each selected address; in the example above, assuming a random start of 1, these would be 1st, 8th, 14th, 21st etc. remaining on file.

You should next make the personal call at the selected address, asking someone at the address to fill in the form.

4. Analysing the information from the callback

Whatever your original sample size, if you have followed the guide at the beginning of point 3, you should now have found enough impaired people to give the 100 handicapped people at Stage II. If your response was 80% - 84% you should therefore go on to the interviewing stage.

If your postal response was less than 80%

In this case you should make sure that the sample drawn is representative. To do this you ought to check that you found approximately the same proportion of impaired people from postal replies as you did from personal callback.

For example, if your response rate was 75% from an eligible address sample of 2,150 you might find

Postal	Number of impaired (category (b) point 7)	250
	Number of completed postal questionnaires	1,613
	∴ Proportion of impaired from postal replies	$\left(\frac{250}{1,613} \times 100\right) = \underline{15\%}$
Callback	Number of impaired	36
	Number of completed questionnaires	225
	∴ Proportion of impaired from personal callback	$= \underline{16\%}$

In the above example, it can be seen that there is little difference in the proportions of impaired from postal replies and from personal callback. If you find proportions of impaired of up to 3% different, your sample should be sufficiently representative, and you can go on to the interviewing stage. (Remember that, because of regional differences found in the national study, the proportions of impaired you find may not be comparable with those in other counties or county boroughs.) You will, of course, treat the 'extra' replies from callbacks as if they had been received through the post.

If there is a big discrepancy in the proportion of impaired, then recalculate this proportion, adding the extra replies to the postal replies. Take a further sample of about 70 addresses and repeat the procedure (points 2, 3 and 4) until you are satisfied that the difference in proportions of impaired is only small (3% or less).

Draft letter accompanying postal questionnaire

date

Dear householder

The Council is now reviewing its plans for the provision of health and welfare services, and, to do this, needs to know how many people there are in   who may need help, and how support can best be provided.

We are interested in people of all ages. Some children may need to have more done for them than other children because of some physical or mental condition. The elderly, though accepting that their movements are a bit restricted, may not be able to do as much for themselves as they would like. There are also younger people who, because of handicap, may need special provisions to help them lead as full a life as possible. There are services, too, for the blind and the deaf, as well as for those with physical or mental complaints.

We are therefore asking if you would help us by completing the attached simple form for everyone living in your household. PLEASE DO NOT pass the form on to others outside who may have difficulties, as this could lead to duplication.

As you will appreciate, we are most anxious to get as complete a picture as possible. It is important for us to know which people have none of these difficulties, as well as those who do. Even if the answer to all the questions is "No", we should like you to tell us so on the form.

We can assure you that any information you give us will be used solely for the purpose of planning services, and will be regarded by everyone working with us as strictly confidential.

When you have completed the form, please return it as soon as possible in the envelope provided. No stamp is necessary.

Thanking you very much for your co-operation,

Yours faithfully

Facsimile signature

Title

Name of householder or tenant ______________________

	Please write "Yes" or "No" in this column for each question	If the answer is "Yes" please write in age and name of person having difficulty
EYESIGHT		
1. Is there anyone in this household who is blind?		
2. or has very bad eyesight even when wearing glasses?		
HEARING		
3. Is there anyone in this household who is deaf, or has to wear a hearing aid?		
4. or is so hard of hearing he or she cannot hear ordinary conversation?		
LOSS OF LIMBS, etc		
5. Has anyone lost the whole or part of an arm, leg, hand or foot by having an accident, amputation, or by being born like that?		
MOVING ABOUT		
6. Is there anyone, apart from babies, who has been unable to get out of bed, or unable to get out of the house, for the past 3 months?		
7. Is there anyone, apart from babies and young children, who has difficulty walking without help, going up and down stairs, or kneeling and bending?		
SELF-CARE		
8. Is there anyone, apart from babies and young children, who has difficulty washing, feeding or dressing themselves?		
9. Is there anyone, apart from babies, who has difficulty gripping or holding things, or using arms, hands or fingers?		
BABIES AND YOUNG CHILDREN		
10. Are there any young children who need more help than usual for children of the same age, in washing and dressing themselves, walking without help, going up or down stairs, etc?		
11. Are there any school-age children who cannot go to an ordinary school because of physical or mental handicap?		
IF NO-ONE IN HOUSEHOLD HAS ANY OF THE ABOVE DIFFICULTIES		
GENERAL		
12. Is there anyone who has some other permanent mental or physical condition, including epilepsy, etc. which makes it difficult for them to go to school or work, take care of themselves, or get about?		
ELDERLY		
13. Is there anyone living here aged 75 or over?		
14. Do you live alone?		

1st reminder - to be sent out 2 weeks after first letter.

Dear householder

On I sent you a letter, asking for your help in planning our health and welfare services.

Up to the present we have not received a reply from you. I should be grateful if you could let us have the completed form back as soon as possible, even if there is no-one in your household who might qualify for help.

Thanking you for your co-operation,

2nd reminder - to be sent out 4 weeks after first letter.

Dear householder

On I sent you a letter, asking for your help in planning our health and welfare services.

I am sure you appreciate how important this work is, and that its value depends on the co-operation of people like yourself. I should be grateful if you could let us have the completed form back as soon as possible, as we are anxious to prepare the results.

I am enclosing a copy of my first letter and another form in case the original has gone astray.

Thanking you for your co-operation,

4.0 STAGE II - TO FIND THOSE 'AT RISK' AMONG THE IMPAIRED

Not all those who have physical or mental impairments are very severely, severely or appreciably handicapped, nor are they all in need of support from local authority departments or voluntary organisations.

The proposed interviewing schedule has been devised to distinguish the 'at risk' groups, which include

1. The very severely, severely or appreciably handicapped.
2. Impaired people not necessarily as handicapped as (1), but who are elderly, that is at least 70 years old.

More elderly people, aged 75 or over, who are not impaired at present, but who live alone, are defined as an 'at risk' group, but the schedule will check for possible impairment. It will also be possible, from the data to be gathered at this stage, to distinguish other groups, such as one-parent households containing an impaired child, or to limit (2) above to those who are at least 75 years old. This will be elaborated at the end of this section. The major concern is with the handicapped.

4.1 The very severely, severely and appreciably handicapped

The definition of 'handicap' here is basically that used in the national study, which relied on the informants' replies to a number of questions relating to ability to get about and take care of themselves. The reasons for this definition of handicap, and the method of classification into categories (or degrees) of handicap is fully discussed in the report of this study [1], but it may be helpful here to summarize the salient points.

(a) Handicap is the disadvantage or restriction of activity caused by the loss or reduction of functional ability.

(b) The degree of handicap is the extent to which activity is restricted.

(c) The loss or reduction of functional ability depends not only on the type of impairment or the presence of a disease, but on the ability to adapt to, to minimize or to extend the effect of impairment.

(d) This ability to adapt may be related to personality, intelligence, education, or to encouragement received. Encouragement could be negative as well as positive, in that some relatives are over-protective, and never allow the person to try to adapt.

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[1] Op cit pages 2 - 16 and Appendix D, pages 254 - 262.

(e) Environmental factors can contribute, both positively and negatively, to the degree of handicap, as every Social Services Department is only too well aware.

(f) Ability to "get about and take care of oneself" were examined, not because these are the only or indeed the most important areas where handicap can occur, but because these two areas of activity apply to everyone, with the possible exception of the very young (1).

In addition, the physical and mental processes employed in these areas are quite extensive, involving on the physical side walking, bending, arm movements at all levels, gripping and co-ordination, and so on, and on the mental aspect, not merely co-ordination, but awareness of danger (going out unaccompanied), memory and reason (knowing that an undergarment goes on before outer clothes, etc) and concentration (eating, rather than playing with food).

4.2 Handicap not adequately reflected by self-care

There are conditions, such as blindness and deafness and diseases such as epilepsy, which would not reflect handicap if we confined assessment of degree of handicap solely to mobility and self-care.

Let us consider these in the light of the purpose of the handbook, which is to enable estimates to be made to help plan local authority services.

(i) The blind

Local authorities keep registers of the blind and the partially sighted. Because of the obvious benefits to a blind person of registration, it is generally thought that the register of blind persons is likely to be a complete record of the blind.

Admission to the register is by certification by ophthalmologists, and takes into account visual acuity and field of vision. It is not possible for lay interviewers to decide, on the basis of answers to questions, that a person is blind, or partially sighted, and should be registered. What they can do, however, is to carry out a simple test of visual acuity, which might lead to a referral to a certifying ophthalmic surgeon.

Social Service Departments are familiar with Form BD8, and the definitions of blindness and of partial sight. The test will enable the interviewer to suggest that vision is below 3/60 Snellen, or 1/18 or 6/60, and, quite apart from whether or not they qualify for registration as a blind or partially sighted person, that anyone with acuity of vision less than 6/60 Snellen, should be considered as 'at risk', and further interviewed with regard to their need of services(1).

---

(1) Assessment of handicap based on ability to work or carry out household duties, for example, would not apply to large sections of the population.

(ii) The deaf

Here again, as with the blind, we are not seeking primarily for a condition which will qualify for registration as 'deaf' or 'hard of hearing', but for a degree of deafness which may lead to a need for local authority support.

As a very rough guide, if the interviewer cannot carry out the interview because the informant has too much difficulty hearing, it would seem that a visit from a social worker for the deaf would be advisable. The informant's ability to lip-read will be taken into account.

(iii) Children

In talking to local authority officials, the impression was that practically all handicapped children were known to the social service authorities through the education authority. For the purpose of this exercise we are regarding children who need much more care from parents or guardians than other children of the same age or who cannot go to ordinary schools as 'at risk'.

4.3 Summary of 'at risk' groups

To summarise, the interviewing schedule - pages - enables the following 'at risk' groups to be identified in the sample of impaired people.

1. The very severely, severely or appreciably handicapped (based on mobility and self-care).
2. Those whose visual acuity is so low that vision is less than 6/60 Snellen.
3. Those who are not able to communicate with the interviewer due to deafness, speech inadequacies, or mental conditions.
4. Children needing special care or educational facilities.
5. Elderly people (70 or over) who are impaired, but not necessarily as handicapped as in (1) above.

In addition, people aged 75, not impaired, but who are living alone, will be considered.

The interviewer's "Do's" and "Do Not's" on the first page of both schedules are not necessary when you have, as interviewers, people who are used to the elderly or infirm, the handicapped, or those needing services. However, some authorities may be using students and others who may, quite inadvertently, cause some distress.

---

(1) The test we are familiar with is the Sheridan Gardiner Test, where the informant is asked to identify a letter (or shape if the person is too young, illiterate or foreign), by pointing to the same shape or letter on a card held by them. Equipment needed is a mirror and cards. We used cards produced by C Davis Keeler, Ltd, but there well may be other supplies, or there may be similar tests already used by your own health and/or education services.

5.0 GENERAL NOTES FOR ADMINISTERING QUESTIONS AND RECORDING ANSWERS

1. There are three ways of recording answers. Questions may be

(a) Precoded - where the answer can only fall into a limited number of categories,

eg Do you have an indoor W.C?

Yes ...1
No 2

You record the answer by ringing the appropriate code.

If the informant qualifies an answer, write in the qualification. If an informant adds comments which do not effect the interpretation of an answer, do not write them in.

eg "Yes - my son got an improvement grant" - not needed.
"Well, we have - but it's been out of order for 3 weeks" - record comment.
Do not read out the precoded categories to the informant unless they are specifically labelled "running prompt" - see 3.

(b) Open - where you record the answer given by the informant as near to verbatim as you can.

eg What more do you think the Social Services Department can do to help people like yourself?

[space for recording answers]

(c) Open-ended - where the most usual categories are precoded, but there is room for other answers.
eg Who usually helps with the housework?

CODE ALL THAT APPLY

No-one.........................	0
Spouse (husband/wife)..........	1
Someone else in household......	2
Home help	3
Relative not in household	4
Others (specify)...............	5

....

....

2. Single or multi-coded answers

For most pre-coded and open-ended questions, the informant's answer will fall into one category only(1). If you were asking about tenure of housing, the informant cannot both own and rent his accommodation, or have both a furnished and unfurnished tenancy.

However, in some cases, as with example given in 1(c), there well may be more than one category which could apply. In such cases, it is usual to print, as in the example, "code all that apply" by the side of the precodes.

3. Running prompts

In order to avoid 'leading questions', it is necessary, in all attitude or opinion questions, to state all the alternatives available, if a choice is given.

For some factual questions, it is easier for the interviewer, the informant, and for the people who will be analysing the answers, to combine the possible answers with the question, in order to give the informant a lead as to what aspect you are interested in. For example

During the last year, has there been any change in your condition?
Would you say your (arthritis) is

RUNNING PROMPT	Better now than it was a year ago........1
	Worse now..............................2
	or about the same as a year age 3

If the informant answers at "worse now", there is no need to read the alternatives.

4. Individual prompts

Again, it is sometimes easier for all concerned to ask about a number of items without re-formulating the same question, for example:-

I'd like to ask some questions about local authority services.
Do you have,

INDIVIDUAL PROMPT	(i)	a home help......................1
	(ii)	meals-on-wheels....................2
CODE ALL THAT APPLY	(iii)	chiropody (through the LA)........3
	(iv)	district nurse...................4
		and so on
	(vii)	None of these....................0

---

(1) The technical term is "the categories are 'mutually exclusive'", ie if they fall in one category, they cannot fall in another.

Each item must be asked in the order given, and the code figure ringed if the answer is "Yes". If the answer to every part of the question is "No", ring code '0' for none of these.

5. Probing

Informants may answer questions with questions, or with ambiguous answers. In these cases you should use a non-suggestive probe to clarify or add to the answer given.

Example Qn: What do you think the Social Services Department can do to help people like yourself?

Answer: Do more for them at home

✗ Wrong probes: "You mean - provide more home helps?" - leading
"What more could they do?" - sounds aggressive or defeatist

✓ Correct probes: (i) What sort of things did you have in mind?
or (ii) In what way?

(a) Useful standard clarifying probes

(1) Could you tell me a bit more about ".........."
(2) Would you explain what you mean by "........."
(3) In what way?
(4) How do you mean".................."?

(b) Getting complete answers to open and multi-coded questions

It is important, with open and multi-coded questions, to get the informant's full reply. If, in the example given in 1(c), the informant says "Oh, my husband", code 1, and ask "Any one else?" until she answers "No". No set rules can be given on when sufficient probing has been done, but care should be taken not to push informants into finding answers simply because they feel they ought to say something else.

The standard probes of

"anyone else?"
"anything else?"

should be used freely.

6. Changing the wording of questions

(a) For most questions, the form of wording has been given. This form of wording must be strictly adhered to except

1. Where a word is put in [ ], you should substitute a more appropriate word.

eg Do you own this [dwelling], or rent it?

In place of [dwelling] you should use "house", "flat", "bungalow", etc.

2. If the term used is not that usually used by the informant, you may substitute a more colloquial term - eg flush toilet for WC, (omitting the word "flush" once it is established that it is a water and not a chemical closet), or "appartments" for "rooms" in Scotland.

(b) Where no wording is suggested
In a few cases, no wording of questions has been suggested; in these cases, the information required is set out as follows:-

Establish housing amenities:

CODE ALL THAT APPLY

Piped cold water inside dwelling..........1
Piped hot water inside dwelling...........2
Fixed bath inside dwelling................3
WC inside dwelling........................4
WC outside dwelling.......................5
No piped water, bath or WC................0

Dwelling has mains electricity............1
Dwelling has mains gas....................2
No mains gas or electricity...............3

7. The flow of questions

Main questions have been numbered 1, 2, etc. In addition, there are a number of subsidiary questions which may or may not apply, dependent on the answer to the main question. These are indented on the page, and numbered (a) (b) etc. Where a dependent question has to be asked, an instruction is shown against the code you will be ringing. If there is no instruction to ask a dependent question, or no instruction to skip the next question(s), go on to next main question.

Example

1. Can you usually go out of the house if the weather is not too bad?

Yes................1 - ask (a)
No, housebound.....2

If can go out
(a) Can you usually get out

RUNNING PROMPT

on your own without aids or difficulty......................3 - on to Qn.3
on your own, but only with aids or difficulty..................4 - on to Qn.3
or can you only get out if someone is with you....................5

To all housebound, or needing escort

2. But can you

get about the house
(walking or wheelchair)..........6
or do you have to sit in a chair
when you're up..................7
or can't you leave your bed?.........8

Thus, if the answer to Qn.1 was "No", you would ring code "2", and since there is no instruction by that code, you would skip the dependent question (a) and go on to next question, Qn.2.

If it were "Yes", you would ring code 1 and follow instructions by asking dependent question (a).

8. Order of questions

Do not change the order of the questions. It well may be that the informant will give you the information you want 'out of order'. If it is convenient, by all means record this information in its proper place, but if you have to go searching for the appropriate question, it will make the interview disjointed. Do not follow up any such information, as you might then find it difficult or forget, to go back to the questions you have missed out.

When you come to the question, a remark such as "Now, you did tell me that you used a walking aid. What type of aid is it?" can be used.

9. Eliminating those not permanently impaired

Questions 1 to 7 are mainly designed to check that the informant does indeed have the 'difficulty' shown on the postal form and is permanently impaired. One or two additional questions have also been included where it seemed appropriate. Where the postal form shows a "Yes" to any item, the information has to be checked, and unfortunately there is no general question which is suitable for all items. The appropriate form of question for the various items is shown on the interviewing schedule, under the postal item number, for example

Yes to postal item 6

I understand you have been [bedfast] [housebound] recently.
4. Are you still unable to [get up] [get out of the house]?

Before starting the interview

Put a ring round each question 1 to 7 which applies. This will make it easier for you to ask only the essential question(s).

When you have asked all the questions necessary (in many cases there will only be one), ask question 8 of all informants found to be permanently impaired.

6.0 STAGE II INTERVIEWING SCHEDULE

(i) Interviewer ____________________

(ii) Date of interview ______________

(iii) Person interviewed:-

Informant 1
Informant helped by proxy 2
Proxy (state relationship) 3

Where subject is at home, but is too confused or irrational, or too ill to be interviewed (excluding temporary illness where an interview may be carried out at a later date), someone who is responsible for looking after the subject (a proxy) should be interviewed. Of course, for young children a proxy interview will be necessary. If subject has died, been admitted to residential home, to hospital/nursing home (unless temporarily), since date of postal take a proxy, relating questions to "when you (she) filled in the postal form".

Serial No ☐☐☐☐

(v) Name of subject .... (BLOCK CAPS)

Address ....
....
....

(vi) If refusal - give reason - giving as much detail of capability as possible, eg if seen, appears active/walks with stick, etc, or out at work. Get household composition in as much detail as possible.

INTERVIEWERS

DO

1. Make sure you identify yourself.

2. Ask for co-operation - participation is voluntary.

3. Check whether it is convenient. You will not get full information if the informant is worried about delaying a meal, or going shopping.

4. If informant appears doubtful - eg "husband doesn't like me to answer questions" -offer to come back when husband, daughter etc is there.

5. Try not to get involved in the informant's criticisms. If she launches into an attack on her daughter-in-law, don't be led into agreement, or into argument. When you are interviewing, you don't have as much right to your opinion as they have to theirs.

6. Remember that age, pain and frustration may make your informant appear slow or fractious. They have earned the right to your respect.

7. Get the parents' permission to interview children under 18.

DO NOT

1. Assume that the informant has nothing else to do but spend time answering questions. They may be watching a favourite TV programme etc.

2. Interview if the informant has a visitor - offer to call back later so as "not to interrupt". Many people do not want friends or neighbours to know their business, but do not want to offend them by showing their feelings. So it is up to you to say it would be more convenient for you to call back.

3. Assume you know the answers to questions - if you feel asking a question may make you seem foolish, you may preface it with "Let me just check ..." or "I'm supposed to ask ...".

4. Tell the informant she is inconsistent. If you do get inconsistent information - check with a remark such as "Oh, I seem to have got something wrong here - can I just check" and repeat the earlier question.

5. NEVER discuss the information given to you in an interview with anyone else - even if you learn that someone is receiving a benefit to which they are not entitled or concealing a forbidden "lodger" etc FORGET IT.

Introduction
Introduce yourself to person you wish to interview (mother of impaired child) and check that difficulty shown on postal was not caused by temporary illness or accident. In accordance with point 9 "General notes", you will have made a ring round the question numbers that apply, viz, those answered "Yes" on postal form. Remember to ask Qn 8 of all those permanently impaired.

IF POSTAL FORM SHOWS

Yes to postal items 1 or 2

I understand you are [blind] [have very bad eyesight]
1. Are you registered as blind or partially sighted?

Registered blind..............	1
Registered partially sighted...	2
Not registered................	3

Yes to postal items 3 or 4

I understand you are [deaf] [hard of hearing]
2. Are you registered as deaf or hard of hearing?

Registered deaf................	5
Registered hard of hearing.....	6
Not registered................	7

Yes to postal item 5

I understand you have had an amputation -- [the informant will correct this assumption if a birth defect]
3. Which limb is affected? ... (specify)

Yes to postal item 6

I understand you have been [bedfast] [housebound] recently.
4. Are you still unable to [get up] [get out of the house]?

Still bedfast.................	1	
Still housebound..............	2	- ask (a)
No longer bedfast or housebound......................	3	- ask (b)

(a) But can you get around the house walking or in a wheelchair or do you just have to stay put?

Gets around house.............	5	skip (b)
Stays put.....................	6	

(b) Does this mean you're quite better now, or do you still have difficulty getting about or taking care of yourself?

Quite better..................	8	- close interview
Have difficulties.............	9	- on to Qn. 6

Yes to any of postal items 7, 8, 9, 10, 11, 12

I understand you [your child] [has some difficulty] [cannot go to school] (summarize from postal)

5. Is this correct?

Yes, has difficulty................. 1
No, incorrect....................... 0 - ask (a)

If incorrect
(a) is this because

RUNNING PROMPT

you're quite better now............ 3 - close interview
or you're better temporarily, but trouble might recur................ 2

6. What does the doctor say is the matter with you?

Not seen doctor/doctor doesn't say.. 0 - ask (a)
Doctor says (specify below)......... 1

If doctor not seen or doesn't say
(a) What do you think is the matter with you?

Yes to postal items 13 and 14

7. I understand you are living alone here - could I just check your age?

[Temporary visitors are to be ignored]

Aged 75 or more and living alone.... 1 - if no other postal 'Yes' on to Qn.9
Under 75 or not alone............... 2

I'd like to ask some general questions about health.

To all permanently impaired

8. Apart from [name of complaint] - do you regularly suffer from any other chronic illness or condition which complicates life for you?

Yes........ 1 - ask (a)
No......... 0

If Yes
(a) What is the matter? [name of disease - not symptoms]

Administering the test for blindness

The test should be carried out at 20 feet, or 10 feet if a mirror is used. The latter is preferred since not only is a shorter distance needed but also it enables the interviewer to stand beside the informant to see if the answers are correct.

Place the mirror 10 feet from the informant, in his line of vision. (Bend down to make sure he will be able to see the letters you are going to reflect in the mirror.) Check that the informant knows what is to be done by showing him a letter at close range (the A 18 is suggested) and asking him to point to the corresponding letter on the key chart which he holds. For children, illiterates or people not able to identify letters by name refer to them as "shapes".

1. Having established that he knows what to do, standing beside the informant, hold the third letter in the pack (X 24) so that it is reflected in the mirror. Ask the informant to point to the same letter on his key card. If he does so correctly, code visual acuity as 6/24 or better, and go on to next question.

2. If he is unable to identify X 24, show him the second card in the pack (H 36) and ask him to point to it on his key card as above. If he does so correctly, code visual acuity as 6/36 worse than 6/24, and go on to next question.

3. If he is unable to identify H 36, show O 60, the first card in the pack. If he can identify this, code as 6/60 worse than 6/36 and go on to next question.

4. If he is unable to identify the O, move the mirror and show it to him reflected 5 feet or hold it 10 feet away without using the mirror. If he is now able to identify it on his key card, code as 3/60 worse than 6/60. If he is still unable to identify it code as worse than 3/60. Go on to the next question unless the 1/18 test is wanted.

5. The pack can also be used to test acuity worse than 1/18 Snellen if this is found more convenient for registration purposes. In this case the T 18 card should be shown from a distance of 3 feet. If the informant is unable to identify the T on his key card, his visual acuity is probably worse than 1/18, and should be coded as such.

   This test could also be used as a check on vision worse than 3/60 - they are nearly comparable, ie those with acuity worse than 3/60 should have worse than 1/18.

To summarise

	Visual Acuity	Code
At 10 feet reflected, can see X	6/24 or better.......	1
can see H	6/36 worse than 6/24.	2
can see O	6/60 worse than 6/36.	3
At 5 feet reflected, can see O	3/60 worse than 6/60.	4
cannot see O	worse than 3/60......	5
At 3 ft. cannot see T	worse than 1/18......	6

Could you just tell me who lives here with you - so I can get a picture of the household.

9. Establish household composition

Relationship to informant	Sex		Age last b'day	Marital status		
	M	F		Md.	Sgl.	Wd.
1. Informant	1	2		3	4	5
2.	1	2		3	4	5
3.	1	2		3	4	5
4.	1	2		3	4	5
5.	1	2		3	4	5
6.	1	2		3	4	5
7.	1	2		3	4	5
8.	1	2		3	4	5
9.	1	2		3	4	5
10.	1	2		3	4	5

Note

(1) "Lives with you" covers those living permanently at this address, and eating at least one meal together, (family, friends, boarders etc.)

A lodger or subtenant, not sharing meals is a separate household.

(2) Widowed includes separated and divorced persons.

[Check Qn. 1 - if informant is registered blind or partially sighted, go on to Qn. 14]

I'd like to ask about your general health - could we start with eyesight?

10. Can (could) you recognise people you know if you were to see them across the street (wearing glasses if applicable)?

Yes, could recognise.......... 8
No............................ 9

11. Can you usually see to read ordinary print (show leaflet) like this, and see to write (wearing glasses if applicable)?

Yes, can see to read/write................ 1
Cannot read/write (illiterate)............ 2
No, can't see unless uses magnifier, etc... 3
No, can't see............................ 4

12. Could you do a little test for me?

> Before asking Qn.12, turn your head sideways, (as if looking round the room), so that informant cannot see your lips. Ask question in normal speaking voice - do not gabble or drop voice - no answer to the question need be recorded, but record here.

Had to repeat remark.......... 1
Subject heard first time...... 2

13. Administer test and code

At 10 feet reflected, can see X...... 1
can see H...... 2
can see O...... 3
At 5 feet reflected, can see O...... 4
cannot see O...... 5
At 3 feet cannot see T...... 6

And how about hearing?

14. [Code if observed]

Can you hear ordinary conversation (with hearing aid working if applicable)?

Too deaf to be interviewed............... 6
Yes.................................... 7
No..................................... 8
Says yes, but difficulty observed......... 9

The following panel is used to find degree of handicap. Note that the main question should be repeated every three or four items. Then, for any item found difficult (needing help/supervision), ask question (a) to sort out those who can do it even with difficulty from those who cannot.

Note there are two variations in the main question,

A. For young children [in most cases the under-12s]
Does [name] need more help or supervision than other children of his (her) age ... then ask each item (i) - (ix) separately, coding '0' in column (1) if "no difficulty or supervision".

B. Where a proxy is taken because informant is mentally impaired
As for A omitting reference to age.

Introduce Can we talk about looking after [yourself] [if proxy - name person].

	(1)	(2)	(3)	
15. Do you generally have difficulty in [or alternate version]	No difficulty or supervision	If difficulty or supervision ask (a) But can you do it yourself, even with difficulty?		Notes
		Yes can do	No cannot do	
(i) Getting in and out of bed on your own?	0	2	3	If uses hoist - code 3 in column (3)
(ii) Getting to or using the W.C.?	0	4	6	If never uses W.C. because bedfast - code 6 in col (3) If incontinent - code 6 in col (3)
(iii) Having an all over wash, (or bathing yourself if bath used)?	0	2	3	If informant cannot use bath, but can wash his body and limbs with difficulty - code 2 in col. (2)
Repeat question (iv) Washing your hands and face?	0	2	3	
(v) Putting on shoes and socks or stockings yourself?	0	2	3	If doesn't dress, wear shoes, etc. because bedfast or never goes out, code as appropriate in col (3).
(vi) Doing up buttons and zips yourself?	0	4	6	If special clothing for handicapped bought, eg cannot do up buttons so wears "pull-on" clothes - code in col (3)
Repeat question (vii) Dressing, other than buttons and shoes?	0	2	3	If, however, wears, say, casual shoes because he prefers them - code in col (1) if no difficulty, or (2) if some difficulty
(viii) Feeding yourself?	0	4	6	If food has to be cut up, code in col (3)
(ix) WOMEN AND CHILDREN ONLY Combing and brushing your hair?	0	2	3	
(x) MEN ONLY Shaving yourself?	0	2	3	
TOTAL COLUMN SCORE	0			

GRAND TOTAL	CATEGORY

Check back and code below where applicable

Further interviewing is necessary if any of the following apply.

First check back to Qn.15, and code if they fall into any of the categories 1, 2 or 3.

If informant does not fall in any of these categories, you will need to check back to the other questions listed.

Qn.15	Handicapped (self care) Total Score 12 or more	1
	Total Score 6 - 11	2
	Total Score 1 - 5, but informant aged 70 or over	3
Qn.1	Registered blind/partially sighted - codes 1 or 2	4
Qn.2	Registered deaf/hard of hearing - codes 1 or 2	5
Qn.4	Bedfast - code 1	6
Qn.4	Housebound, code 2	7
Qn.7	Aged 75 or over and living alone - code 1	8
*Qn.13	Test score, worse than 6/36, codes 3, 4, 5 or 6	9
Postal - item 11	- child has to go to special school	10

If informant does not fall into any of the above categories, thank them for their co-operation, and close interview.

If informant falls in any of the above categories, and you are not continuing with the interview, say

"There are other things the Social Services Department would like to know to plan their services - but I'm not really qualified to ask about them, as I don't know all the services that are available. Even if you don't need any services, or would prefer not to use them, one of their more qualified people would like to see you. Could you tell me whether any days or times are not convenient, so they won't trouble you unneccessarily?"

If you are continuing the interview, go straight on to question 16.

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*For survey supervisor:- DO NOT PRINT ON SCHEDULE

If the informant's visual acuity is worse than 3/60 or 1/18 then he will most probably qualify for registration as a blind person. If acuity is 3/60 but worse than 6/60 he may qualify for registration as blind if his field of vision is restricted, or as partially-sighted if he has full field. If vision is 6/60 - 6/24 he may be registrable as blind if the field of vision is markedly contracted to the greater part of its extent (this is unusual) or as partially-sighted if there is moderate contraction of the field. If vision is better than 6/24 it is unlikely, although not impossible, that he will qualify for registration either as blind or partially-sighted. We have suggested that people with visual acuity worse than 6/36 Snellen should be considered 'at risk', but clearly this definition could be extended or narrowed as wished.

7.0 STAGE III - DATA ON WHICH TO PLAN SERVICES

It could be argued that the planning of services for the handicapped and elderly depends solely on their need for support that cannot be obtained from relatives and friends, and therefore must be given by the local community. However it is almost impossible to define 'need' universally. It has been found(1), for example, that conditions which will lead one local authority to accept that a service is needed will, on the criteria of another authority, not be considered as a justification for supplying help.

It could also be argued that planning services for the handicapped and elderly, or any other at risk group, should take into account not only need, but the likely acceptance of services by those in need. For example, a person may qualify for meals-on-wheels on the basis of a particular authority's assessment of need, but, if he is not prepared to accept them, there is little point in arranging to provide them.

In order to meet both these arguments, data should ideally be collected which would enable the authority concerned both to assess need according to their own criteria, and to give an indication of the likely take-up of benefit.

People's attitude towards the acceptability of the benefit may depend on any number of positive or negative reactions; a general antipathy to 'welfare', reluctance to try something new, fear of relatives' or neighbours' disapproval, a previous unsuccessful application for perhaps a quite different service, fourth-hand reports of how good or how bad the service is, are only some of the reactions we have all met(2).

It is impossible, in any structured interview, to investigate every possible need; for example, a woman with one paralysed arm may be helped towards doing her own cooking by supplying suction pads for mixing bowls, or adapting the working surface of her kitchen, while another could be more self-supporting if electrical points or switches were moved, taps exchanged for levers or even foot pedals, and so on. This is why some authorities may decide to send in a trained social worker at this stage. [If this applies, and using specialist staff is likely to mean a long delay before some interviews are carried out, some order of priority could be achieved by considering mobility, degree of handicap indicated by score at Question 15, and household support (question 9).]

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(1) Social Welfare for the Elderly, by Amelia I Harris, Government Social Survey Report, number 366.

(2) There is no need here to elaborate on the difficulties of publicising the availability of services or of applicant's giving up after being directed to another Department perhaps some distance away.

However, the data collected at questions 16 to 36 should enable a very reasonable assessment to be made of the major services, and can be adapted to cover any further services provided, or which it is proposed to provide, by individual local authorities. The general idea behind the design of this stage is first to find out what activities entail difficulty, and then to see, where there is difficulty, whether support is available, or, if there is a local authority service for which the informant qualifies, whether there is a likelihood of the informant accepting such a service (1).

Let us consider the actual questions 16 to 36.

Question 16 lists the 'services' which may be available, or are proposed, to help with self-care, and is therefore linked with question 15, where difficulties in self-care are recorded.

Let us suppose that the informant has said at question 15 that she has difficulty getting in and out of bed, and having a bath. She would be asked, at question 16

"Would it make it easier for you to get in and out of bed if they could fix a hoist or support bar here?"

and "Would it make it easier for you to have a bath or all-over wash if they could:

fix bath rails, etc
install a sitz-bath
or a shower
provide a bath seat

or

send a bathing attendant to help you?"

Now if you can do anything else to help - you can add this in. If there are things you are not prepared to do, for example install a sitz-bath or shower, these can be deleted.

Question 17 refers to the need for chiropody. Here again, if it is not proposed to arrange home visits by chiropodists, the question and precodes will need to be adapted.

Question 18 is unlikely to be productive, but it is sometimes useful to ask a general question to show that one has finished with a particular aspect - in this case self-care.

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(1) It will be seen that for this sample, by mentioning the services available wherever there is difficulty, the factors of not knowing which services are available, or where to go to get them, will not affect the possible demand on the services.

Question 19 asks about difficulty with shopping, housework and cooking, and (b) gets them thinking about the help they have, before asking whether they need (more) help (c).

We have deliberately avoided mentioning the home help service, as some authorities may decide that, say, shopping needs could be catered for more efficiently by trying to get neighbours to help. (The 'good neighbour' scheme is already in being in some areas.)

Questions 20 and 21. Here again, if there are other specific things one could do to help housewives, they may be added in, or if there is a shortage of voluntary helpers for particular items, such items may be deleted.

The value of including window cleaning and gardening is doubtful as most people, handicapped or not, might think help with these particular items would come in handy. However, question 21 has been put in as a guide for your asking about any available voluntary household services.

Questions 22 to 24 need no special comment.

Questions 25 and 26 are directed toward finding the need for special transport. While accepting that local authorities may not be able to arrange transport themselves for church attendance, special interest groups or sports' grounds, it may be possible for the vicar, the organisations, or supporters' clubs to get volunteer drivers for such activities. Here again, if this has previously been tried and found unsatisfactory, or if there are other places to which transport could be arranged, items could be deleted or added.

It will be noted that access to buildings has not been covered in this schedule. If you feel this data would be useful, you could add a general question, after question 26.

26(a) "Are you prevented from going anywhere because once you are there you can't get in?"

No, not prevented..... 0
Yes (specify)......... 1

Similarly, provision of and access to W.C.s in public buildings or parks have been omitted, although we know this can be a very real problem not only to those in wheelchairs, or who have other locomotive difficulties, but, for example, for a mother with an adolescent son or a married couple, where help is needed with toilet, and segregrated toilet facilities bar entry of the escort.

Again, if there is any reason for knowing this here, the following question might be useful. [If it is used, following question 26, subsequent question numbers will need adjustment.]

Some people tell us that they don't go to places because there are not enough toilets, or they can't get into a toilet. Does this apply to you?

No........................ 1
Yes, not enough toilets.... 2] ask (a)
Yes, cannot get in to use.. 3]

If yes

(a) Can you tell me of specific places? [Record]

> Mothers with teenage sons, or husbands/wives who need to help informant with toilet, may have difficulty due to separate sex toilets - if so, note specially.

Questions 28 and 29. Items may be deleted or added.

Question 31a(i). The purpose of this subsidiary question is to see whether the informant would benefit from having the telephone adapted or moved to a more convenient place.

b(i). Similarly, an informant who has difficulty hearing, or difficulty holding a receiver, might answer "No" to (b) as they do not know adapted models could be supplied.

Questions 32 to 35 need no special comment, other than to add that, if it is of interest to know whether the informant is in a purpose-built local authority dwelling, or in sheltered housing, it would be better to get this information from the housing authority.

Question 36. This gives the informant a chance to have his/her say.

There is room on the final page

1. to record any services already being supplied to informant

2. for the assessment of services needed.

If, concerning (1), records are in several different offices or there are other reasons for the checking of records being very time-consuming, you may care to add a question on the lines of question 29 of the national study questionnaire for any service where the records are not readily available. This question should be asked after question 18.

Introduce I'm going on to talk about other things the department could do, so before I do this could you tell me whether you are getting any help from any of the local authority services.

Do you have ....?

Check back to Qn.15

[Of course, this can be done quite easily if you hold this page by the left hand corner, while asking Qn. 16, and just flipping back as necessary to see if anything is coded in col (2) or (3) of Qn. 15.]

Where the informant cannot do, or can only do with difficulty, an item for which assistance or aids are available - see list below - introduce and ask where applicable.

Introduce The Department can supply fittings or help where things are difficult.

[Ask where appropriate for each item found difficult or impossible.]

16. Would it make it easier for you to ..... [example get in and out of bed]

if they could [example fix a hoist or support bars?]

			ring code for any aid required
Item (i)	-	Hoists, support bars	1
(ii)	-	Widen doors for wheelchairs	2
		Fit special raised seats	3
		Fit handrails or wall supports	4
(iii)	-	Bath rails, handles, ceiling rings, to help get in and out of baths	5
		Sitz-baths	6
		Showers	7
		Bath seat	8
		Bathing attendants (male and female)	9
(v)	-	Gadgets to help pull on shoes and stockings	10
(vi)	-	Advice on special clothing	11
(viii)	-	Gadgets or specially designed spoons, forks, etc	12

NOTE: Where informant already has the aid referred to (eg already has a gadget for pulling on stockings) DO NOT code as required here.

17. One thing I didn't ask about was feet. Do you have any discomfort because of corns or hard skin, or because you can't manage to get your toenails cut?

Yes, difficulty (despite chiropody).. 1 } ask (a)
Yes, difficulty...................... 2 }
No difficulty........................ 3

If difficulty

(a) If it could be arranged, and I can't promise anything, would you like to go to a clinic, or have someone come here [more often] and see to your feet?

Yes, would go to clinic..... 5
Yes, would see here......... 6
No.......................... 7

18. Is there anything else you can think of that the council could do to make it easier to get up, wash and dress youself, and so on? If so - what?

Cannot think of anything.... 0
Specify suggestions

To all housewives

[Note: It may be necessary to ESTABLISH that the informant is the 'housewife' - that is, the person responsible for most of the shopping, cooking, housework, etc or who would be responsible but for handicap. All men and women living alone, and married women are 'housewives'.]

I'd like to ask how you manage the household chores. [Ask (a)(b) and (c) for each item (i)(ii) and (iii)]

19. Do you manage to do

Item		
(i) a) Most of your own shopping? Yes.... 1 No..... 2	b) Does anyone help? If so, who? No-one helps...... 9 Helped by (specify)	c) Do you need (more) help with ... Yes..... 1 No...... 0
(ii) a) Most of your own housework? Yes.... 1 No..... 2	No-one helps...... 9 Helped by (specify)	Yes..... 1 No...... 0
(iii) a) Most of your own cooking? Yes.... 1 No..... 2	No-one helps...... 9 Helped by (specify)	Yes..... 1 No...... 0
d) Do you get at least one good meal a day? Yes.... 1 No..... 2 →		→ There is a scheme for delivering hot meals 2 or 3 times a week. Would you like to have these meals-on-wheels delivered? Yes....... 4 No........ 5 Already have . 6

20. The Department can fix kitchen aids, or advise on special gadgets to make housework and cooking less difficult for handicapped people. Would you be interested in knowing more about this, or can you manage all right [with more help/meals on wheels]?

Interested...... 1
Can manage...... 2

21. There are some other household jobs people like yourself find difficult that we can sometimes get volunteers to do. Do you need someone to

		Yes	No
INDIVIDUAL PROMPT	(i) Come in and light fires	1	0
	(ii) Do window cleaning	2	0
	(iii) Help, occasionally, in the garden	3	0
	(iv) Help change curtains	4	0
	(v) Take or collect laundry/bagwash	5	0
	or (vi) are there any other regular odd-jobs you need help with? [If yes, specify]	6	0

Ask all except permanently bedfast - if permanently bedfast, go on to Qn. 28.

How about getting about the house

Code without asking if observed

22. Do you use a walking aid or wheelchair to get about the house?

CODE ALL THAT APPLY

Yes, wheelchair.......................... 1
Yes, tripod/frame/crutches................ 2
Yes, calipers, surgical footwear.......... 3
Yes, stick(s)............................. 4
No, but uses furniture, etc, as support..... 5
No aids used, but walks slowly or with difficulty............................ 6
No aids or apparent difficulty............ 0

23. Can you get up and downstairs all right, or would it help to have a handrail fitted.

Manages stairs........................... 1 - on to Qn.25
Difficulty, handrail would be helpful...... 2
Difficulty, but handrail would not help.... 3
No stairs................................. 4

24. Are there any odd steps or stairs to landings, or other rooms, or leading out to the garden or street which you can't manage?

Yes...... 1 - ask (a)
No....... 2

If yes

(a) Would you be able to get out and about more easily if the social services department could fit a ramp? [describe ramp if necessary]

Yes...... 4
No....... 5

25. Are there any places you need to go to for medical or special treatment, where you find it very difficult to obtain transport?

Yes...... 1 - ask (a) and (b)
No....... 2

If yes

(a) Where do you need to go?

(b) How often? [For each place mentioned in (a)]

Some people tell us they are prevented from going to centres or clubs, and so on, or only go very occasionally, simply because they find it impossible or very difficult to get there.

26. Are there any places you want to go to, but can't get to because there is no adequate transport? [If yes, where?]

No, can get there... 0
Yes, specify........ 1

27. Some people have mentioned other places. Could I check to see if you are interested? [read list - omitting any stated at Qn. 25 or 26].

Do you want to go to [each item separately] - but could only get there if the local authority could arrange transport?

Item		need special transport	
		Yes	No
(i)	Church/other place of worship	1	0
(ii)	Centre or club for handicapped or elderly	2	0
(iii)	School or other educational institute	3	0
(iv)	Special interest groups - like Women's Institute, British Legion, Trades Union, and so on? [Specify which group(s)]	4	0

ASK ALL - Omit first sentence for bedfast.

28. We've been talking about your getting to places. In some cases the council can bring the service to people's homes. Here are some services they provide - I'll just read the whole list, even if some won't apply in your case, and you can tell me if you are interested in any of them.

	Yes	No
(i) The mobile library?	1	0
(ii) A friendly visitor - someone just to keep you company?	2	0
(iii) A laundry service for incontinent people? [Explain - but don't make too much of it - "Some people have conditions that make them wet or dirty bedclothes"]	3	0
(iv) Disposable incontinence pads?	4	0
(v) Day/night attendants? [If proxy - add - "to give you a chance to go out or get a good night's sleep"]	5	0
(vi) Arrange a short-term stay in a residential home when your family go on holiday?	6	0
(vii) Arrange a seaside or country holiday?	7	0
(viii) Lend sick room equipment?	8	0

OMIT QN.29 FOR BEDFAST, AND HOUSEBOUND WHERE OBVIOUSLY INAPPROPRIATE

29. There are various concessions available in this area for elderly or handicapped people. Can you tell me if you are interested in them.

	Yes	No
(i) Cheap (free?) travel on buses between 9.30 and 4.30.	1	0
(ii) Cheap (free?) use of swimming baths. [If restricted to certain days/times mention these to informant]	2	0
(iii) Cheap (free?) use of public baths. [Mention any restrictions]	3	0

ASK ALL

Now, about communication

30. Do you have a radio or television?

Have radio only.............. 1
Television only.............. 2
Both radio and TV............ 3
Neither...................... 0

31. ESTABLISH whether there is a telephone for the use of the household, and whether it has been adapted.

Has standard telephone........ 1 } ask (a)
Has adapted telephone......... 2 }
No telephone.................. 0 - ask (b)

If has telephone
(a) Do you use it?

Yes, uses..................... 4
No, does not use.............. 5 - ask a(i)

If not used
(i) Why don't you use it?

If no telephone
(b) Would you personally find a telephone useful?

Yes, useful.................... 1
No, not useful................. 0 - ask b(i)

If not useful
(i) Why do you feel it wouldn't be useful?

Introduce
Housing conditions and amenities can make a big difference to how you manage so before I go I'd like to ask you about them.

32. How long have you lived here (at this address) ..... ________ no. of years

33. Do you own this [dwelling], or rent it?

Owned (freehold or leasehold - with/without a mortgage)..... 1
Rented from local authority................................. 2 - on to
Rented from vol. agency..................................... 3 Qn. 35
Rented privately, unfurnished............................... 4
Rented privately, furnished................................. 5
Rent free... 6

34. Are you on the local authority housing list?

Yes.... 8 - ask (a)
No..... 9

If on housing list
(a) How long have you been on the list?

less than 1 year..... 0
no. of years__________

Finally about amenities

35. Do you have, inside the [dwelling]

[Establish whether sole use or with other households]

INDIVIDUAL PROMPT

CODE ALL THAT APPLY

	Yes, sole use	Yes shared use	No
(a) piped cold water	1	2	0
(b) piped hot water	3	4	0
(c) fixed bath [include showers]	5	6	0
(d) a WC (flush toilet)	7	8	9

If no inside WC

(a) Do you have an outside W.C. or is there no flush toilet at all?

Outside WC, sole use........ 1
Outside WC, shared use...... 2
No flush toilet............. 3

36. Is there anything else you'd like to add that might help us plan our services?

When interview is concluded say something like

"Thank you for talking to me - our planning department will find what you've said very helpful. I would just like to stress that some of the services we've talked about may not be available at the moment, but we hope to plan for them in the future."

FOR OFFICE USE

Services already being supplied	Services needed

7.2 Assessing need in the sample of handicapped people

First check to see that the identification of the handicapped in this sample has been done correctly, (page 42); only those cases in the sample where questions 16 onward properly apply are to be considered as a basis for assessing need for services.

As has been said before, assessment of qualification for a service may vary from authority to authority, and the type of support allocated will depend on different criteria. Let us take a simple example.

A partially paralysed woman aged 74, living with her husband aged 76, is housebound. The husband does the shopping, and no further help is required. However, she has difficulty with housework, and although her husband helps, she feels more help is required. She also finds cooking very difficult, and says she is not able to get at least one good meal everyday, and would find meals-on-wheels a help.

One authority might allocate a home help for both housework and cooking; another might allocate a home help for a smaller number of hours to do housework, and supply the woman and her husband with a cooked meal three times a week. Another authority might argue that meals-on-wheels could not be supplied to the husband as he was not housebound (1).

The need for services, therefore, should really be assessed by studying each case. Where only a small number of schedules are involved it may be reasonable to do the whole assessment this way.

However, some authorities may prefer to do some preliminary sorting by machine, in order to separate out those handicapped who have no need of services, and concentrate examination on those who appear to need help to decide the most appropriate way of meeting these needs.

Since data processing systems are so varied we can give no one method of analysing the data collected. It is probable that some of the eventual samples of handicapped people will be small enough to make hand counting of the codes the easiest, and even the quickest, method. Also, such small numbers of people will need some of the services that it will possibly be uneconomic to do any form of machine-processing. However, it is obviously up to the local authorities concerned to consult their own data processing units, if they have them, to see what should be done. This should be done at a very early stage, as, although the interviewing schedules are largely pre-coded, the pre-codes may not suit the particular system.

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(1) This may seem unlikely, but we have met this rigid application of the rule, where one member of a couple has refused to accept meals-on-wheels since the spouse was expected to go to a luncheon club as he was not housebound.

7.3 Editing and coding data for transfer to punch cards or tape

(a) Editing

Here again, the officials operating the system will advise you as to how they want the data presented, for example, whether they can punch direct from the schedule, or need some form of transfer sheet. They will also design the card lay-out, which may, as we have said, mean changing some of the pre-codes.

However, in all cases, the schedules will have to be edited to check:-

(i) That the information is consistent
eg Qn.9 - children under 16 are not shown as 'married' or 'widowed'.Qn.15 (item x) is not answered by a woman. If Qn. 16 is coded '2', then Qn.22 should be coded '1'.

(ii) That the information is complete, that is, there is an answer to every question and item that applies.

(b) Coding

Most of the schedule is precoded, but there are some open questions, or other items, you may have to code if you feel them to be necessary for your purpose. For example, if the purpose is to sort out those with an apparent need of home help, it might be comforting to know that a daughter helps with the housework, [Qn.19 - ii(b)] but all that it is necessary to know at this stage is the answer coded at Qn.19 (ii)(c).

Where a coding frame has to be devised, the following may be used as a guide:-

(i) A random sample of the answers should be examined to see if some pattern is emerging; these answers may be written out for examination to avoid constant reference to the original documents.

(ii) The frame must be so devised that each answer, or component part of an answer, can be fitted into one group only.

For example, if you were devising a coding frame for number of years lived at an address, you might be interested in

Less than 1 year..........	0
1 - 5 years...............	1
5 - 10 years..............	2
10 - 15 years.............	3
etc	

But the answer "5 years" could fit equally well into both codes 1 and 2.

A better coding frame would be:-

	S.C. (Single code only)
Less than 1 year	0
1 year but less than 5 years	1
5 years but less than 10 years	2
10 years or more	3

(iii) A coding frame can be multi-coded as follows.

Example of coding frame for household composition.

	Informant alone	0 - Single code
	Informant and others:	
CODE ALL THAT APPLY	Spouse	1
	Married child(ren) (including in-laws)	2
	Unmarried independent child(ren) (aged 18 or over, or 15-17 and working)	3
	Unmarried dependent child(ren) (under 15, or 15-17 still at school)	4
	Parent(s)	5
	Sibling(s)	6
	Other relative(s) (older generation)	7
	Other relative(s) (younger generation)	8
	Non-relatives	9

7.4 Punch data required for sorting those needing services from others

Serial number
Qns 1, 2, 4
Qn 9 - Sex of informant
    Age (in single years for grouping by machine, or coded into groups)
    Marital status of informant
    Number of people in household
    Household composition
Qns 10 - 14
Qn 15 - score
Qns 16, 17
Qn 18 - if this question is productive
Qn 19 - col: (c) only
Qn 20, 21
Qn 23,
Qn 24(a)
Qns 25 - 31
Qn 35
Qn 36 - if productive.
(Qns. 32 - 33 are necessary if there is a length of residence or tenure qualification for any service.)

All these data would fit comfortably on to an 80 column card - and again, with specialist advice, you may decide to be more ambitious and punch off other items of interest.

8.0 ESTIMATING NUMBERS IN THE COUNTY OR COUNTY BOROUGH FROM SAMPLE DATA

The principle for estimating numbers in the whole area from the sample data is simple, and indeed obvious enough. If care is taken to ensure that the sample was random, then one assumes that handicapped people and those with special needs will make up the same proportion of the population as they do of the sample. For example, if 3% of the sample were handicapped, then we would estimate that 3% of the population were handicapped. If the total number of people in the population is known, we would then be able to estimate the number who are handicapped. The argument is, of course, similar for those with special needs, or, indeed, with any particular characteristic.

However, it is helpful to bear in mind that the main aim of the survey is to estimate the number of people in your area who are handicapped or who have special needs and that the use of percentages is only an intermediate step in the calculations. Percentages may also be useful for comparison of different areas but this is really incidental.

8.1 The effect of non-response on estimates

Although the calculation of an estimate is basically simple, complications arise due to non-response. For example, suppose it is decided to sample 2,000 out of, say, 40,000 households in an area but it proves impossible to obtain interviews from 200, then we have no information for 10% of the households in the area.

If we have any evidence that the non-response households contain a higher (or lower) percentage of people with some important characteristic then we should take this evidence into account and modify our estimates.

The problem of non-response to the postal questionnaire has been dealt with in that we have ascertained that those not responding do not differ significantly from those responding(1). However, non-response at the interviewing stage does affect the calculations. This is because two stages were necessary, the first to find the impaired by a postal questionnaire and the second to find the handicapped by personal interview of the impaired. Although we assume that those not interviewed have much the same characteristics as those interviewed, if we take the final number of handicapped as the number found from those households responding to the postal questionnaire, we will underestimate the total number of handicapped in the area, since we have not taken into account the extra number of handicapped expected with 100% response at the interviewing stage.

For example, in a borough with 50,000 households, 1,850 replies to the postal questionnaire were received, and of these 1,850, 350 were impaired. The response at the interviewing stage was 93% (325 interviews being obtained from the 350 set) and 100 handicapped people were found. If one disregarded interviewing response the number of handicapped in the borough would be the proportion of handicapped in the sample multiplied by the total population ie

$$\frac{100 \times 50{,}000}{1{,}850} = 2{,}703.$$

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(1) Paragraphs 3.3 and 3.4, pages 21 to 24.

However, the 100 handicapped were found in only 93% of the impaired, therefore if interviews had been obtained from all the impaired, one would have expected, assuming the non-responders were the same as the responders, $\frac{100}{93} \times 100 = 108$ handicapped people. The estimate in the whole borough would then be $\frac{108}{1,850} \times 50,000 = 2,919$ handicapped people, or just over 200 more than previously estimated. Clearly, with larger samples and larger populations this error would be increased.

It can be seen, therefore, that the estimation of numbers in the total borough or county is a two-stage process - firstly finding the number of handicapped in the sample had there been a 100% response at the interviewing stage, and then finding the number in the population. In practice these two stages can be combined into one formula.

8.2 What you need to know to make an estimate

1. Total number of households in the administrative county or county borough (known from paragraph 2.2, page 9)

   Denoted by the symbol a

2. Number of eligible households responding to the postal questionnaire (including any extras from callback on non-responders) - (see para 3.3, page 21)

   Denoted by the symbol b

3. The interview sample set (people)

   Denoted by the symbol c

4. Number of interviews achieved (people)

   Denoted by the symbol d

5. Number with the characteristic wanted for estimate (for example, the number of handicapped people)

   Denoted by the symbol e

You could then find the number with any characteristic had there been a 100% response at the interviewing stage by

$$\text{Number with characteristic (e)} \quad \times \quad \frac{\text{Interview sample set (c)}}{\text{Interviews achieved (d)}}$$

and then the estimate in the whole area by multiplying the result of the above by

$$\frac{\text{Total number of households in the area}}{\text{Total number of households responding to postal questionnaire}} \quad \begin{matrix}\text{(a)}\\ \text{(b)}\end{matrix}$$

Clearly the two parts can be combined so that the estimate for characteristic e is $e \times \frac{c}{d} \times \frac{a}{b}$. It can be seen that once one has calculated $\frac{c}{d} \times \frac{a}{b}$ any characteristic can be multiplied by this result to give an estimate. In the previous example, $\frac{c}{d} \times \frac{a}{b} = \frac{350}{325} \times \frac{50,000}{1,850} = 29.11$. This means that the population is 29.11 times as big as the final interviewed sample, and we would therefore expect 29.11 times as many with each special characteristic as in the sample. In this example, there were 100 handicapped people in the final sample and therefore 100 x 29.11 = 2,911 handicapped people would be estimated in the total population (cf 2,919 found before - the insignificant difference being due to rounding off).

A note on the use of households

You may have noticed that for a and b the number of *households* is used and for c, d and e the number of *people*. Clearly, you can, if you wish, use the number of *people* for a *and* b if this is known. We have used households since these figures have already been found and have assumed that the number of people per household in the whole area is the same as the number of people per household in the sample. If care was taken to draw a representative sample, this assumption is reasonable since the samples are large.

8.3 Accuracy of the estimates

The estimate you will arrive at is 'the best single estimate' - although, since the estimate is obtained from a sample, there is a certain margin of error, the magnitude of this 'error' depending on the rarity of the characteristic and the size of the sample.

One has to use a certain amount of commonsense when dealing with cases of such rarity that they may well be unique. For example, when sampling residents in Part III accommodation, (old people's homes), we found one woman aged about 80, who had been a resident for some 50 years. We found, on checking this phenomenon, that it was indeed true, the woman being a dwarf, of Slavonic origin and speaking no English, who had been found abandoned by a travelling circus. She had been given a place in the (then) workhouse, and had been in residential care ever since. Clearly, if we had wanted to describe the reasons for people becoming residents it would have been misleading to have suggested that some 3% of residents had needed this accommodation as they had been abandoned by a travelling circus. Care should therefore be taken when dealing with small numbers not to make unjustifiable estimates.

There is a strong argument for using the 'best single estimate' as a basis for planning, since, given a range, one would tend to settle for the mid-point anyway.

However, we have been strongly pressed to add a note on 'confidence limits'.

There any many varied statistical methods for determining the accuracy of population estimates from sample data. As you may know they are often very complex, involving elaborate calculations. We have suggested below a fairly simple test, but have not attempted to discuss the mathematical theory behind it. You may wish to use other tests or different confidence limits. On the other hand, you may simply wish to accept the formula given and not worry about why it is done in this way.

Complete accuracy can only be achieved by interviewing the whole population! An estimate obtained from a sample may give too small or too large a value, and it is useful therefore to have some idea of the possible magnitude of the error.

A simple formula for these 'confidence' limits is

$$\frac{c}{d} \times \frac{a}{b} \left(\sqrt{e} - \frac{1}{2}\right)^2 \text{ and } \frac{c}{d} \times \frac{a}{b} \left(\sqrt{e} + \frac{1}{2}\right)^2$$

Thus if $\frac{c}{d} \times \frac{a}{b} = 29.11$, and $e = 100$, we infer that the number of handicapped in the population is likely to be between $29.11 \left(\sqrt{100} - \frac{1}{2}\right)^2$, and $29.11 \left(\sqrt{100} + \frac{1}{2}\right)^2$ ie between 2,627 and 3,209. The best single estimate is 2,911. We cannot be certain that the true number lies between the limits but we do know that there is a 2 to 1 chance that it does(1).

To summarise, the best single estimate is $e \times \frac{c}{d} \times \frac{a}{b}$ and approximate 68% confidence limits are $\frac{c}{d} \times \frac{a}{b} \left(\sqrt{e} - \frac{1}{2}\right)^2$ and $\frac{c}{d} \times \frac{a}{b} \left(\sqrt{e} + \frac{1}{2}\right)^2$. where $\sqrt{e}$ should be obtained, from square root tables, to two decimal accuracy. It is advisable to round off the confidence limits to the nearest 10, for example, 2,630 and 3,210, to avoid giving an unjustified impression of precision, since the limits are intended as a rough guide only.

8.4 Calculating confidence limits to determine sample size

Now you have seen how confidence limits are arrived at, you will be able to see, as stated in Paragraph 2.1.1, that mathematically to double the accuracy of an estimate it is necessary to take a sample four times as big, not twice as big.

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(1) The general formula is $\frac{c}{d} \times \frac{a}{b} \left(\sqrt{e} \pm \frac{f}{2}\right)^2$. For a 2 to 1 chance, ie 68% confidence limits as above, f = 1, for a 3 to 1 chance, ie 75% confidence limits, f = 1.645 and for a 9 to 1 chance, ie 90% confidence limits, f = 2.326. It follows that for an interval of great certainty the limits must become unusably wide. Other values for f may be obtained from tables of the normal distribution.

Example

Given a = 50,000 (total number of households)
b = 1,850 (households responding to postal questionnaire)
c = 350 (number of interviews set)
d = 325 (number of interviews achieved)
e = 100 (number of handicapped)

we have shown that the estimated number of handicapped in the area lies between 2,630 and 3,210 for 68% confidence limits. If the size of the sample were doubled, the limits (supposing the number of handicapped etc found doubled) would be between 2,710 and 3,120, but if the sample were four times as big the limits would be 2,770 and 3,060. Thus the range between the limits for

1 x sample = 580
2 x sample = 410
4 x sample = 290

Clearly this can be carried further. If one wanted three times the accuracy then nine times the sample would be needed - in this case an initial sample of nearly 20,000 households!

9.0 RECOMMENDATIONS

1. It is well worth getting all the interviewers together for a personal 'briefing', explaining

   The purpose of the exercise - emphasizing that it is not an attempt to try to find all handicapped people in the area, but is to interview a scientifically selected sample.

   If, however, the interviewers are approached by people asking for an interview, or they are told about "a very old lady who is all on her own", you may want to know about them for normal welfare purposes, and so ask for them to be referred to your Department. Interviewers must make sure they are submitted separately, and clearly marked 'Not in-sample'.

2. The 'eye test' (Qn. 12) should be demonstrated, and all interviewers should practise administrating the test before starting to interview.

3. Interviewers should be given the opportunity of observing - or better still carrying out - a dummy interview. [For the national study we asked for volunteers from among those attending a centre for the handicapped, explaining what we were doing and asking if they would help us to "try it out". We arranged transport to the briefing centre (in our case, the office), and supplied refreshment and a small sum for 'expenses'. There was no shortage of volunteers, particularly after the first briefing; indeed, it was difficult to find opportunities for all who wanted to take part. The official in charge of the Centre reported that the effect on the morale of the handicapped taking part was startling; they felt, for the first time in perhaps many months, they were making a real contribution.]

4. Refusals

   All people approached have the right to refuse to co-operate, but sometimes the interviewer will get a refusal simply because she has called at the wrong time, and the informant is unwilling to commit herself to making an appointment. On the other hand, it could be that the informant "doesn't like the look of" the interviewer, or even the way "he came rat-a-tatting at the door".

   Even the best interviewers will get refusals, but if one interviewer is getting an above average refusal rate it may be worth while stopping that particular interviewer, and calling back to check the reason for refusal.

   In one study involving interviewing elderly people, where the refusal rate was unexpectedly high, callbacks were arranged. The supervisor introduced herself with

   > "One of our interviewers called to ask if you would co-operate in helping us to plan our social services, and at that time

> you didn't feel you could help us. It is, of course, voluntary, but I've come to ask if you still feel that way about it. If you do - that's perfectly all right - we won't bother you any more - but I just wanted to check."

This resulted in two-thirds of the 'refusals' agreeing to be interviewed, as they explained "I thought perhaps she was selling something", or "I couldn't be bothered then", or "I didn't think it was that important - but it must be ..." etc.

5. Prechecking the interviewing schedules

It is recommended that interviewers bring/send in completed schedules every three or four days since this maintains a steady flow of work for those checking them as they come in.

It is Social Survey practice to 'precheck' the first four or five schedules returned by each interviewer to make sure that instructions have been understood and that the schedule is being administered correctly. If certain questions are being consistently mishandled it may be necessary to send additional instructions to all interviewers. This pre-checking process includes seeing that the right questions are asked of the right people, all applicable precoded or open questions have an answer and that adequate answers have been recorded for open questions. If any errors (particularly repeated ones) are found the interviewer is contacted and asked to put them right. This may mean another call on the informant, but such recalls should obviously be kept to a minimum. If the interviewer keeps making errors, another three or four schedules should be prechecked, and so on until the standard or accuracy is acceptable.

6. Layout of the interviewing schedule

The interviewing schedule is printed on coloured paper solely for ease of identification in the handbook. You will realise, of course, that page 8 of the schedule should be printed on the back of page 7; any blank pages are due to the insertion of Section 7.0 concerning data on which to plan services which seemed most appropriate at this point.

The layout of the interviewing schedule is designed to make it as easy as possible to administer. For example, the instructions for the eye-test are printed on the page facing question 13 for easy reference, and the instructions for identifying the handicapped in the sample are printed facing question 15, which is the main source of this information. It is advisable to keep to this layout if possible.

10.0 PUBLICITY, COMMUNICATION AND PUBLIC RELATIONS

1. All interviewers should be issued some official identity card or letter, authorising them to interview on behalf of the local authority concerned. It would be useful if they could also have the original postal questionnaire with them.

2. It is the practice of the Social Survey

   (i) to inform the police that we will be interviewing (say elderly, handicapped) in their area, and

   (ii) to ask each interviewer to call at the local police station so that in event of 'suspicion' the police can reassure the person called on.

   This may not be so important where local people are being used, but might be useful if say students are working as interviewers.

3. It has been suggested that local newspaper or radio publicity as to why and when the survey is taking place will help response. This may be useful immediately before the postal stage; it is unnecessary before either of the interviewing stages, as by this time the informant will have shown willingness to co-operate by completing the form. In such publicity, a reference to the subsequent interviewing calls might lead some people to conceal difficulties in order to avoid an interview.

   On the other hand, advance publicity will undoubtedly lead some handicapped people who are not drawn in the sample to write in saying they had been overlooked, and asking to be included in the survey. It is good public relations, if interviewing staff are available, to give them an opportunity of answering questions, although these forms must NOT be included in the results.

4. Some people may have difficulty in completing the postal questionnaires and seek advice from Citizen's Advice Bureaux, Social Security Offices, home helps, or the 'Town Hall'. People on housing waiting lists may confuse a local authority communication with their application. It would be as well if as many 'official' contacts as possible be aware of what is going on, as a 'nothing-to-do-with-us' attitude may cause suspicion and distress.

   It is inadvisable, however, to give a general enquiry point on the first wave of the postal, as this might lead to its being swamped with enquiries. However, when sending out the second reminder (final wave), it may be productive if a final paragraph to the effect that if there is any difficulty in completing the form .... will be pleased to help them.

5. Leaving a leaflet

   Sometimes, after an interview, the informant has doubts, or, in some cases, a relative is told about the interview, and the relative 'wonders what's behind it all'. It may be useful if a leaflet or letter is left, giving the name of the Director of Social Services, and the address, stating the purpose of the study, reassuring them of confidentiality, (as in the original letter), and thanking them for their co-operation.

IN CONCLUSION

There will, we are sure, be some doubt in people's minds as to

(i) the relative importance of discovering the needs of only a sample of people, in their area, compared with the ideal of finding all those handicapped in the area.

and (ii) whether what may seem a rather complicated method is necessary to find the handicapped, whether or not one takes a sample or census.

No-one would deny that the aim of every social services department should be to discover every person in need, and to give them the necessary support. However, to do this, the supportive services have to be adequate to meet the needs. This sample survey method is a means of assessing the adequacy of the supportive services, so that when all handicapped in need are identified they will not be just names on a register, but people to whom help can be given.

As to whether a simpler method of identifying the handicapped and assessing their needs can be found, we know that there have been some recent studies carried out where the identification of the handicapped stems from the answer to a simple question on the lines of "Is there anyone here who is physically or mentally handicapped?" What evidence there is casts doubts on the value of such self-identification. Many people, especially the elderly, think of "the handicapped" as those in wheelchairs, or born with some malfunction or deformity. Elderly people, suffering from arthritis for example, tend to accept that they cannot do things, or get about, because of age, not handicap. In the national survey, some 10% of those who were so severely handicapped as to need special care, said they were not interested in registration (on the general classes register) as they did not consider themselves as "handicapped". The proportion is much higher, particularly among the elderly, for those who are handicapped but not quite so severely.

In the national study, too, questions about the register followed a number of questions on the cause of impairment, treatment, motor capacity and difficulties of self-care, so that such informants were well aware of their loss of function, while still failing to class themselves as handicapped. How many more would have failed to identify themselves without having had to think about difficulties is not known.

We can only say that we have done our best to limit the work to what is absolutely necessary and our method looks more formidable on the printed page than it actually is. Nevertheless

(a) unless one is prepared to cover every household it is necessary to draw a sample which is representative;

(b) the postal stage is necessary as one is looking for a relatively 'rare' characteristic, and needs to avoid using trained staff in a door-knocking capacity. This method of identifying the impaired by postal enquiry has been used, and found satisfactory;

(c) at stage II, the first 15 questions are needed to identify the handicapped as distinct from the impaired, (with the exception of household composition, which it is convenient to collect at this stage);

and (d) the rest of the interviewing schedule is necessary to identify needs.

Registration

It could happen that, having carried out the survey, and made an estimate of the number of handicapped in your area, you find you have near enough the same number actually registered. It would be unwise, however, to conclude that your register is almost a complete record, and that you have already identified all the people who need services. This is due to the fact that some people may be registered who would not be considered to be permanently and substanitally handicapped by our definition; for example, some-one who needed grips for the bath might be registered so that they could be fitted, but have no other needs.

It would be best, therefore, to see how many of the people in the sample who need services are registered, and take this into consideration when deciding how many people you need to seek out before you can be satisfied on 100% registration.

It only remains for us to hope you find this guide useful.

Amelia I Harris
Elizabeth Head

24 August 1971

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037